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ABSTRACT

The changes in teaching, learning, and assessment brought about by the introduction of the National Certificate in Scotland were assessed. Data were collected through interviews with and a survey of 511 teaching staff (398 responses) and 1,646 students (1,277 responses) in a number of colleges throughout Scotland and a survey of 344 employers (68 usable responses). Teaching staff and employers also made additional comments on the National Certificate. Findings indicated that employers liked the emphasis on practical and applied learning. Staff and students indicated the importance of teaching more than was covered in the learning outcomes, but few staff believed that it was being achieved. Employers liked the flexibility of negotiating programs to meet their needs, but small employers seemed to find it difficult to take advantage of flexibility. Some data suggested that employers and employees were less than enthusiastic about being involved in training. Employers believed that in-house training met present and future needs of the company and college-based training was geared to future needs. Staff claimed to be using student-centered techniques and welcomed the wider use of a variety of teaching methods. Students felt that the teaching methods used were interesting and motivating. Some employers were concerned that the assessment system did not pose a sufficient challenge to students. Students liked the diagnostic approach to assessment. Staff had some reservations about assessment. (YLB)

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MODULES: TEACHING, LEARNING & ASSESSMENT

The views of students, staff and employers involved in the National Certificate

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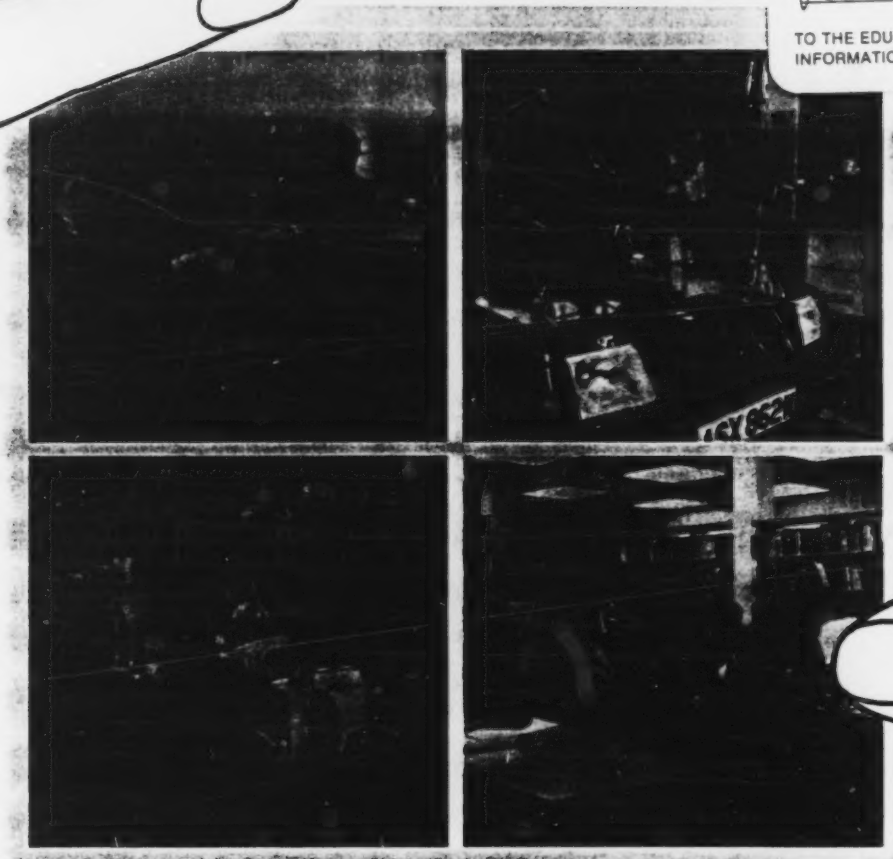

Harry Black / John Hall / Susan Martin

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MODULES—TEACHING, LEARNING AND ASSESSMENT

The Views of Students, Staff and Employers involved in the National Certificate

Harry Black/John Hall/Susan Martin

The Scottish Council for Research in Education

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We must also thank those many employers who spared us their time to reflect on their experiences of using the National Certificate in their training programmes. Their views added another perspective to this report without which it would have been the poorer.

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Harry Black, John Hall and Susan Martin

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1 Introduction

Background and history

In recent years, modular systems of educational provision have become increasingly common. Many claims are made for the advantages of modular provision. It is thought to increase flexibility, allowing response to changing needs more quickly than would otherwise be the case. A programme of study built up of relatively short modules is felt to increase the likelihood of attracting students by providing easier access, more frequent short-term rewards and a greater number of possible end-points for those who would be discouraged by the prospect of a long, and possibly arduous, course of study with no guarantee of success at the end of it. This, in turn, is thought to increase the motivation of the students concerned. Along with modularisation of the curriculum other reforms are often introduced. In particular, changes in the ways in which students are taught and assessed are often implied, if not demanded, by modular reforms.

In Scotland, the publication of *16-18s in Scotland: An Action Plan* in 1983 heralded a particularly radical innovation in modular provision. The Action Plan, as it became known, advocated the sweeping away of all the then current qualifications in non-advanced further education and their replacement by a unified national system of modules. Each of these modules was to be of a notional forty hours length and they were to be designed in such a way that they were capable of being taken alone as free-standing units or combined in different ways in individualised programmes of study to provide equivalents of the previous qualifications which they replaced. Assessment of these modules was no longer to be by externally set end-of-course examinations but was to be college–based, continuous and criterion referenced.

The proposals in the Action Plan were soon transformed into the reality of the new National Certificate modules, the first of which were delivered in the autumn of 1984. The Action Plan and the National Certificate had been the creations of the Inspectorate in the Scottish (Office) Education Department, but in 1985 a new body, the Scottish Vocational Education Council (SCOTVEC) was formed to take charge of the administration and further development of the National Certificate. The catalogue of modules grew and there are now around 2500 covering most vocational areas as well as more general educational ones. From the first, the National Certificate was conceived of as being at least as much an educational initiative as a vocationally-based training initiative.

Each module is defined in a document known as a module descriptor which specifies the learning outcomes which the student has to achieve, the performance criteria against which success is to be measured and the recommended assessment methods which can be used. In addition, suggestions are made about the content and context of the module, and the teaching methods and learning approaches which would be most suitable.

The radical changes in assessment promoted by the Action Plan and enshrined in the National Certificate were the major focus of attention in the first years of its implementation (Black, Hall *and* Yates, 1988; Black, Hall, Martin *and* Yates, 1989). The changes in assessment were portrayed as enhancing the learning of the students through providing feedback, guidance, rewards for achievement and hence motivation. However, it is important to recognise that the changes in teaching and learning which were being advocated were equally important. Much more practical, active and participatory teaching methods were encouraged and the concept of student–centred learning was heavily promoted as a way of encouraging new, efficient and, it was hoped, effective learning strategies in students. Naturally, this raises many questions about the learning strategies, teaching approaches and assessment methods being advocated, their translation into practice, and about the ways that they interact with each other.

Aims of the project

In 1988 the Scottish Office Education Department awarded a research contract to the Scottish Council for Research in Education to examine the changes in teaching, learning and assessment which the introduction of the National Certificate had brought about. The project had two broad aims which had to be translated into research questions. The first of these was to undertake 'an analysis of the nature and appropriateness of the main teaching approaches and assessment procedures employed in colleges, with particular interest in changes in methodology arising from the National Certificate'. Closely allied to this, was the intention to undertake 'a comparison of the learning strategies favoured by teachers, by students and by employers'.

For each of these broad aims there were four sets of questions which had to be addressed—

- how that area of interest was treated in the literature associated with the National Certificate, and in the more general educational literature
- clarification of the way in which interested parties, at the policy-making level, interpreted the key concepts which would be the focus of the research
- the extent to which those actually involved in the implementation of teaching, learning and assessment were aware of current thinking in these areas
- finally, and perhaps most important, how far the ideas and 'aspirations' we identified were reflected in the practice of the National Certificate

Collecting information

Two main strategies were used to collect the information needed. In the first phase of the project, the research team undertook an intensive period of interviewing teaching staff and students in a number of colleges throughout Scotland. At the same time, a smaller number of interviews were held with a selection of employers or employers' organisations. All of these interviews were semi-structured and were intended to inform the research team of current concerns in colleges and in industry regarding the National Certificate. They were also important in formulating questions for the later part of the research. The first phase of the research yielded a great deal of illuminating information.

The second phase of the research was a large-scale survey of the views of staff, students and employers throughout Scotland. This was intended to address questions which had been raised by our reading of the literature and to gauge the extent of those concerns which had been identified in the interviews. In addition, teaching staff and employers were invited to supply any further comments on the National Certificate which they wished to make.

There are therefore three main sources of data:

- the information supplied in interview by staff, students and employers
- the quantitative data gained from the responses to the survey questionnaire
- and the written comments which accompanied many of the returned questionnaires.

All three sources of data are drawn on in this report.

Reporting data from several sources in this way has the advantage that we can be more sure of our findings. However, the different nature of the data should be borne in mind when using the report. The survey questionnaire data is easily presentable in terms of 'percentage response'; it therefore yields a measure of the strength of an attitude or perception within the population. Interview data and individual comments on questionnaires can be quantified and in this report we sometimes report the actual numbers making a statement and sometimes use more general terms such as 'a few', 'some' or 'the majority'. The important point to recognise however is that the particular value of these data is the insights they

provide because they are the response to open questions. It matters less that we know the numbers making a statement in a report such as this which also has the advantage of survey responses.

Choice of modules

With over two and a half thousand modules in the current National Certificate catalogue, it was felt to be impractical to attempt any form of random sampling of modules. We therefore restricted ourselves to looking at a much smaller number of modules which, it was thought, represented a reasonably broad range of types of provision and was likely to provide examples of different teaching approaches, assessment procedures and expected styles of learning on the part of the students. These ranged from the academic to the practical and the highly technical to others which were more concerned with interpersonal skills. They were also chosen on the basis that there were reasonably high numbers of students enrolling for these modules in a large number of centres, so that we might expect to obtain sufficiently large, and widely distributed, samples. The chosen modules were:

- all of the Communication modules
- a group of Mathematics modules which might best be described as 'mid-range', being more demanding than basic numeracy modules, but not highly specialised
- Practical Caring Skills (PCS) modules
- Financial Record Keeping (FRK) modules
- a group of Electronics modules which had a high practical content.

Staff who were teaching and students studying in these areas were the interviewees in the first phase of the project. A larger sample of staff and students from these same modular areas completed questionnaires in the second phase.

Choice of colleges

Colleges were chosen for inclusion in the questionnaire survey on the basis that they were likely to be teaching all, or most, of these modules at the time of the survey (spring 1990). Colleges were approached and asked to provide details of the numbers of staff and students who would be involved with these modules then. On this basis we found 20 colleges which were likely to be teaching the chosen modules. In the event, not all the colleges who took part in the survey were teaching all the chosen modules at the time of the survey, but the gaps were few, and all 20 colleges took part. All mainland Regions of Scotland were represented in the sample.

In each college, all staff who were teaching the chosen modules were asked to complete their questionnaires in a specified week in spring 1990. One class of students in each of the chosen module areas in each college was also asked to complete questionnaires. These student questionnaires were administered by the teaching staff concerned and returned to us.

Sample and response rates

Table 1.1 shows the numbers of questionnaires distributed to teaching staff, students and employers. As can be seen, the response rates from staff and students, at almost 80%, were encouragingly high and provided us with reasonable samples.

The figures for the employers' sample require some explanation. The employers to be included were chosen with the aid of an employers' organisation. However, we had no way of knowing when we sent out the questionnaires whether the employers contacted had any involvement at all with National Certificate training. They were therefore asked to complete a simple return slip if they had no such involvement for either training or recruitment purposes and, as a result, were unable to complete the questionnaire. There were 78 such slips were returned to us, as were 68 completed questionnaires. We therefore have an overall return rate

of 42%, but only 20% of the companies contacted provided usable information. The employers are the smallest of the samples to be dealt with in the following pages, and this must be borne in mind when reading the report.

Table 1.1: Respondents to the survey

	Questionnaires distributed	Questionnaires returned	Response rate %
Staff	511	398	79
Students	1646	1277	78
Employers			
-overall	344	146	42
-usable		68	20

Outline of the report

This report has been arranged thematically. Chapters 2, 3 and 4 deal respectively with learning, teaching and assessment in the National Certificate. As a preliminary to this research, we reviewed the literature in each of these areas. Fuller details of this theoretical background to learning, teaching and assessment are available in a previous report produced by the research team (Black, Hall and Martin, 1990).

Within each chapter, we discuss the views of staff, students and employers and examine the differences and similarities between the views of each of these groups. Since no group is entirely homogeneous, we also note those differences which exist within groups of respondents.

It should be stressed that the findings recorded in these chapters are primarily based on our respondents' perceptions of the National Certificate. We are very limited in the extent to which we can relate these perceptions to what may, or may not, be the reality of National Certificate provision. It is also the case that some of these perceptions are based on unspoken assumptions which we feel may need to be challenged. Where we feel that it is appropriate, we do so.

Chapter 5 attempts to draw together our findings and present our conclusions, together with some of the implications which these might have for teaching staff, employers, college administrators and policy-makers.

It might be argued that this thematic separation of learning, teaching and assessment into separate chapters is artificial and runs the risk of overlooking the close links which exist between each of these areas. We hope that we have avoided this danger and have made these links explicit enough for the reader to follow the threads of the argument. An alternative structure for the report, in which learning, teaching and assessment were dealt with together and separate chapters concentrated on staff, students and employers, was considered but was felt to lead to much needless repetition. When reporting research into an innovation as complex and as rapidly changing as the National Certificate, it is necessary that some structure is imposed on the data if confusion is not to result. It may be inevitable that this structure leads to an apparent simplification of a complex reality, but it is our hope that it will also lead to some clarification of the very difficult issues involved.

2 Learning

Learning in the Action Plan

There is considerable discussion in the Action Plan literature about 'learning'. The three themes which predominate can be characterised as concerns with the content of learning, the purpose of learning and approaches to learning.

Content

Analysis of the Action Plan literature suggests that it set out to challenge what were seen to be some traditional views of further education, and in particular an assumption that the content of the curriculum is restricted to the acquisition of specific vocational knowledge and skills.

Guidelines on Learning and Teaching Approaches (SED 1985) identifies five broad clusters of aims for educational programmes for post–16 education. These are:

- developing knowledge of one's self, one's community and one's environment
- developing skills, ranging from basic numeracy and literacy to higher-order academic and process skills
- developing practical and physical skills, including those appropriate for handling equipment and for the expressive arts
- developing interpersonal, social and life skills
- developing positive attitudes towards life in general and towards the learning process in particular.

Clearly this suggests a curriculum which is broader than a list of specific knowledge and skills.

Purpose

The purpose of learning as described in this literature can be summarised in terms of a number of key words including 'relevance', 'transferability' and 'responsibility'. Education is seen as a preparation of individuals for roles in a rapidly changing society where they will have the ability and motivation to adapt to new challenges. These aims are clearly associated with relevance and with developing competences which are transferable to novel situations. The responsibility of further education to develop these skills and competences is made clear, although there is little discussion of the relative roles of colleges and employers in this area.

Approaches

Throughout the literature, there is a clear assertion that certain approaches to learning will result in the achievement of aims such as these. Participative learning approaches are suggested as the means to encourage 'the development of independence'; 'confidence can grow when students are given opportunities to do things by, and for, themselves'; 'motivation will depend on the extent to which learning experiences can be negotiated'. These participative modes are intended 'actively to involve' the student in the whole of the learning process, from negotiation of programme choice and choice of learning approaches, to the use of assessment to review progress.

As well as promoting student participation in the learning process, emphasis is given to the development of 'good study habits' such that 'students should develop the ability to organise their own learning'. In order to develop these skills, it is suggested that lecturers should 'help students to analyse their learning experiences and evaluate their own performance'. There is a clear commitment to the notion that 'the process of learning is more important that the content, and that it is through the experience of the process that young people acquire the capacity to learn for themselves'.

Questions on learning

In our interview study, we asked lecturers, students and employers several broad questions about learning. The responses given by students, staff and employers varied considerably. For many students there was a degree of puzzlement about the question - they had never really thought about 'learning' before. Staff had insights to offer but their responses often tended to drift quickly into 'teaching' or 'assessment' matters. Employers had relatively little to say about the detailed approaches to learning in classrooms. They did, however, offer a substantial agenda of their own which centred on the purposes of learning in the vocational training context, the respective roles of employers and colleges and the priorities they wished to place on the content of learning.

To give some structure to these diverse responses we report our findings in terms of the content, purpose and approaches to learning described above. The questions we address are therefore:

Content: What was said about the content of learning?

- what was the employers' perspective?
- was the focus identified in the Action Plan considered appropriate?
- was content considered to be sufficiently flexible?

Purpose: What is considered to be the purpose of learning in further education and training?

- is there a commitment to 'training'?
- what are the responsibilities of colleges and employers?

Approaches: What was said about the National Certificate approach to learning?

- could it be described from existing 'theoretical' perspectives?
- were the priorities identified in the Action Plan considered appropriate?
- were there limitations on approaches to learning?
- what was seen as likely to result in 'successful' learning?
- were there significant group differences?
- were there perceived differences in the suitability of the National Certificate for various groups of students?

Overall: What were the overall views on learning in National Certificate courses?

The content of learning

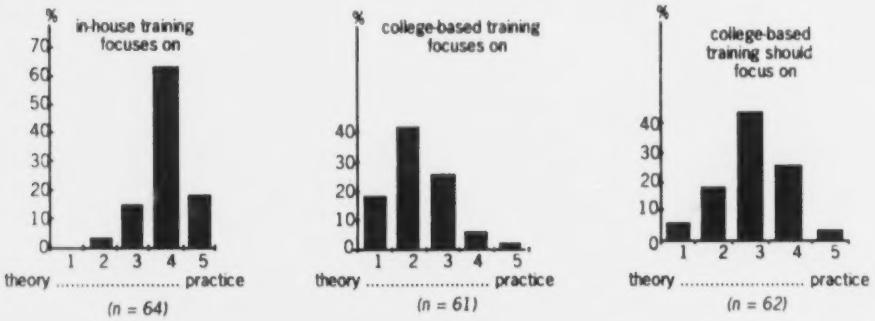
The employers' perspective

In interview, employers placed considerable stress on the content of what should be learned. Despite the occasional statement like 'nobody gives a damn about learning the theory', there was a general acceptance by employers that the development of both knowledge and understanding had a role to play in vocational education. There was, however, a more emphatic commitment to learning in practical applied situations.

Many employers had a clear distinction in their minds about the kind of learning which took place in National Certificate courses in colleges, as against that in their own work-based programmes. One was 'looking to the college to supply the academic input, and we ourselves do the practical aspect'. Another felt that modules provided the background knowledge which apprentices required to understand the practical things which were subsequently taught them by the employer. He, however, was concerned that the knowledge input be properly articulated with the practical contexts in which trainees would work.

As is shown in Figure 2.1, when in our questionnaire study we asked employers what they considered to be the appropriate balance between theory and practice in college-based and in-house training, most employers saw the latter as slanted towards the practical end of the scale, while college-based training was seen as more oriented towards the theoretical. Nevertheless, there appear to be quite a few employers who think that college-based provision should be less theoretical and more geared towards practice.

Figure 2.1: Balance between theory and practice in trainees' training: employers' views



It was thus generally accepted that the strength of the college input to training was in delivering knowledge and understanding, but this would only meet employers' needs if the theory was considered within appropriate contexts. For example, one employer involved in training engineers was quite emphatic that the Mathematics component in colleges should be delivered by engineering lecturers and not Mathematics lecturers:

> "I can assure you it works better that way. The Maths department would teach Maths from a pure point of view, whereas we want it from the absolutely applied point of view. The best thing is lecturers who have been practising engineers, who were qualified and got the urge to go back to college and teach. A problem occurs when you've got a lecturer who really doesn't grasp the problem. They're wonderful at Maths and they sometimes just prove to students how clever they are at Maths. But they don't teach the students very much at all."

In addition to these general statements about content, two employers underlined that they expected more of vocational education than the development of theory, understanding and practical skills. One of these restricted this view to YTS, which he felt was about behaviour and attitude which would influence the students in their relationships with adults at work, dealing with people and presenting themselves for interview. The other took a much broader perspective. He said that he had traditionally looked on a course of study not only for its academic content but as a challenge which had to be met. In his words, "a great deal in a course of study is breasting tapes - building belly into a person - to give them working stamina". This was something which he felt had been diminished by the introduction of the National Certificate. He felt that the open opportunity to get through the learning outcomes, irrespective of the number of chances the student had to 'pass', was not a sufficient challenge. This was both demotivating for better students and a weakness in the information available to employers, who were unable to differentiate between students who had struggled to succeed, and those who had met the challenge with merit. These issues are pursued further later.

Overall, there was a wide range of opinion on whether skills such as those developed in personal and social development modules (PSD), or basic skills such as those in Communication, should be part of formal vocational education. In one manufacturing company, communication skills were seen as important for all trainees and were included as part of the college modular programme. In another company, providing a service in the public sector, communication skills were developed 'after' training and were seen largely as the province of managers. But a more extreme position was taken in relation to PSD by one commentator, who said that he found it "terribly insulting to tell someone that they had to be trained in that". He felt that if there was a choice between sending a student on a 'course' which had a high personal and social development content (as opposed to a practical or vocational content), or nothing at all, then from his point of view it should be nothing at all. To an extent, this bore out the perspective of another organisation which was keen to see an element of liberal studies, communication

studies or general studies within vocational education, but claimed that this broadly-based approach was acceptable to only a small minority of employers.

Appropriateness of the focus identified in the Action Plan

The topics which employers chose to cover are clearly associated with the kinds of aims identified in the Action Plan literature described above. To investigate the extent of commitment to these priorities and to compare the views of others with the views of employers, we asked a number of questions in the questionnaire study where respondents were asked to rate the importance they felt should be attached to certain foci in non-advanced further education, and to estimate the extent to which they felt it was being achieved in National Certificate courses. The results are shown in Table 2.1.

Table 2.1: Staff, student and employer views on aspects of the 'content' of learning

		claim that this is an important function of non-advanced FE %	*claim that the National Certificate achieves this in practice* %
Teaching students a lot more than is covered in the learning outcomes	Staff (n=358)	93	23
	Students (n=1203)	85	54
	Employers	—	—
Developing problem-solving skills	Staff (n=360)	96	38
	Students (n=1194)	87	60
	Employers	—	—
Developing practical skills which will be useful in their career	Staff (n=355)	95	66
	Students (n=1203)	90	68
	Employers (n=65)	91	61
Maintaining competence in basic skills eg reading, writing and computation	Staff (n=360)	95	66
	Students (n=1196)	90	68
	Employers (n=62)	95	63
Developing 'staying power' and determination	Staff (n=357)	94	24
	Students	—	—
	Employers (n=64)	89	36

The Action Plan literature suggests that emphasis should be placed on several aims which are not included in most specific modular learning outcomes. These include, for example, attitudes and self-knowledge which are difficult to express in the form of modular outcomes and other social and life skills which are included in specific personal and social development modules but will only be encountered if these are part of a student's course.

We therefore asked staff and students about the importance of teaching more than is covered in the learning outcomes. Both were clear that this should be important but only 23% of staff felt that it was being achieved. A large minority of students agreed with them. The notable exception to this was lecturers in Practical Caring Skills who clearly had a different viewpoint on their teaching—61% of them claimed that the National Certificate is successful in this area.

The only other question in Table 2.1 in which the success of National Certificate learning has an equally low rating is in the more specific area of 'developing staying power and determination'. Once again staff, and in this case employers, considered this to be important but, with the exception of Practical Caring Skills staff, neither was convinced that it was being nurtured by the National Certificate.

The problem is not unique to the National Certificate. It is a common criticism of systems of external accreditation that they concentrate on limited areas of knowledge and skill, often to the exclusion of non-cognitive skills. It is also well-established that dealing adequately with these, especially in a 'high stakes' assessment context, is fraught with technical and resource difficulties as well as

being highly controversial. Indeed, it could be claimed that by offering personal and social development modules the National Certificate has gone further than most examination systems in trying to meet the need.

Nevertheless, these data suggest that dealing with 'life beyond the learning outcomes' is a difficulty, except, perhaps, in some subject areas such as Practical Caring Skills where development of interpersonal skills is at the core of learning. Our speculation would be that staff who are concerned might want to ensure that each student includes a personal and social development (PSD) module in his or her programme of study. Alternatively, it may be worth considering (as is presently happening in some secondary schools) whether the attainment of PSD outcomes could be dealt with on a cross-curricular basis, with all or some lecturers taking responsibility for them. However, none of this would be a solution if the content of PSD did not reflect the priorities staff and employers might have in this area: a review of the current content might therefore be appropriate.

We also asked about other content areas such as problem-solving, practical vocationally-oriented skills, and basic skills in reading, writing and computation. As can be seen in Table 2.1, all of these were again considered important. Although there was some concern, especially amongst staff, about the success of the National Certificate in these areas, it was not as marked as that discussed above. The conclusion we would reach is that there is strong support amongst lecturers, students and employers for the kinds of emphasis identified for the National Certificate, and with the exception of the personal and social skills area discussed above, progress has been made in meeting these.

Flexibility in content

A number of more specific comments were also made by employers about the way in which the National Certificate offered flexibility. On the positive side, one organisation was particularly keen on the way in which it met the needs of trainees who, for whatever reason, either could not or did not want to complete an entire year's course, but instead wished to study for a smaller number of modules in specific areas. Another liked the flexibility as regards what can be learned. He felt that it was easier to bring about changes in module learning outcomes than it had been to persuade committees to change courses leading to the 'Ordinary National Certificate'. He also liked the flexibility of being able to identify new modules which would enhance his course of training, or to weed out aspects which were redundant.

There was diversity of opinion on the extent to which this choice was available to employers, or indeed whether they wanted it. Two large employers with substantial training programmes clearly had a great influence in determining what their trainees studied. As one of them said: "I have a lot of flexibility, because I ask for it. I will look at what the trainees' needs are, I'll talk to the trainees, and we'll develop a programme that is good for them". She said that she would like to be able to say to colleges "That's what we want. If you don't give it us, we'll go elsewhere". In relation to this she was unhappy about colleges' insistence on sticking to a 'forty-hours' guideline. She said that she objected to paying for the other 28 hours if a student was able to complete the course in twelve hours.

Another large enterprise was aware of the possibility of negotiating special programmes but tended to follow what the college wished to provide. But there seemed to be more of a difficulty for smaller companies. One respondent felt that smaller companies in the area had found it difficult because his own organisation, due to size, was able to dictate what the courses would be like. Smaller companies had to fit in to these courses and that had caused them problems. Another organisation, representing the views of smaller companies, felt that students had to accept what was on offer at the college. Only in cases where an employer had a large number of students, or was prepared to pay over the odds, would something special be provided for them. The introduction of the National Certificate had improved the flexibility available, but the extent to which firms were able to take advantage of it varied. There was some supporting evidence for this in the questionnaire study where we found that employers with more than 20 employees in training had a greater chance of negotiating

programmes of study with colleges than those with less. It could be that around 20 students is the borderline for a viable class and that employers with fewer than this number of trainees will consequently find it more difficult to arrange for 'non-standard' programmes, or modules which are not part of the college's normal provision (Table 2.2).

Table 2.2: Degree of negotiation between employers and colleges for employees' training

Degree of negotiation with college	*Response according to number of employees in training (n=56)*	
	≤20	>20
there is no negotiation between the company/ organisation and the colleges which deliver employees' training	13 (41%)	2 (8%)
the college–based element of employees' training is largely determined by the colleges which deliver the training	16 (50%)	13 (54%)
the college–based element of employees' training is largely determined by employers who negotiate a programme in conjunction with the college(s)	3 (9%)	9 (38%)

The purpose of learning

Were employers committed to training?

There is a widely held assumption that learning within vocational training is a 'good' thing, and that employers ought to support it anyway. To a large extent this was borne out by the data. One employer claimed that:

> "Over the last few years, there's a lot more coming together - certainly with the employers and the colleges. This is a very positive tie. We spend a lot of time with them - quite happily spend a lot of time with them. We see it as being to our benefit. I think they do, as well."

But on the other hand there were also data which suggested that some employers and, indeed, employees were less than enthusiastic about being involved in training. One felt that trainees are not especially interested, particularly where general studies are concerned. Another felt that the main impetus was to gain qualifications to obtain promotion. Very little of the theoretical understanding obtained through study was used in the field. Instead, he claimed that he received one or two telephone calls a week asking "What do I need to get my ... certificate?" He never got phone calls saying "I should love to go on this to understand about Electronics, or understand about transmission". He went on to admit that in many cases the theory was rather superfluous and felt that many of his employees could get through their working life quite happily without understanding very much about the basic principles lying behind their particular job.

The range of different perspectives on purpose can, perhaps, be understood by comparing the views of individuals representing three types of organisation included in the interview sample. One of these was particularly committed to vocational education developing transferable skills within the labour force, and preparing individuals better to meet the needs of rapidly changing technology. However, he felt that - not least because of current pressures on Scottish industry - employers would be tempted to invest only in training which would produce short-term, very specific returns. He feared that the National Certificate, which comprised modules which he saw as very job-specific, might exacerbate this trend and so make training even more employer-centred than hitherto.

The representatives of a second organisation (one which perhaps best represented the views of smaller employers) to an extent bore this out. They claimed that vocational education was primarily a case of training in basic practical vocational skills. Employers were not interested in anything beyond this. Indeed, they claimed that not only employers but also students saw no need for training beyond the absolutely necessary minimum. Ideas such as 'transferable skills' were seen as part of an unacceptable and unmeaningful jargon which was now becoming associated with vocational training: "I don't find anyone talking about transferable skills - small companies don't accept this jargon".

But these views were not necessarily reflected amongst the training officers in the larger companies in the sample. One argued that he was "turning out thinking, reasoning craftsmen who can transpose formulae if it's required in their function. They can understand Ohm's Law and know how to transpose in the particular applications that they need to do it". Another said that companies were increasingly looking seriously for individuals with wider knowledge. In their training programme they normally included two or three modules which are not part of the basic requirement of the course but which could be gained by students who mastered the core quickly. These modules were not a free choice for students but represented aspects which the company felt might be of interest or value in the future even if they could not be used at the present. In these cases, vocational education and training were still clearly oriented around the needs of the employer, but there was some commitment to the notion that learning might involve the development of transferable skills which might meet the needs of individuals as well as those of the company. Perhaps this was best summed up by another employer who stated that, in principle, he felt that training ought to be relevant to the world of work rather than the needs of particular employers. But as an employer, he selfishly hoped that students would be taught to do the work the way it was done in his plant: "What we are interested in is in our employees' having specific skills for the company, and if they are transferable, all well and good — it's an added bonus".

Responsibilities for training

We followed these issues up by posing questions about how college- and workplace-based training are geared towards meeting the present needs of the company or its future needs, about whether different forms of provision are, or should be, geared towards meeting the needs of the employer or the employee, and also whether training should concern specific or general vocational skills.

As can be seen from Figure 2.2, in-house training provision is felt by most employers to be fairly evenly balanced between meeting the present and future needs of the company, while more employers feel that college-based training is more geared to their future needs. Even more employers think that college-based training should be more geared to meeting their future needs.

Figure 2.2: Balance between meeting organisations' present and future needs in training: employers' views

Figures 2.3 and 2.4 show that most employers felt that in-house training was slanted towards providing specific skills appropriate to the company and meeting the needs of the employer, while college-based training had a greater emphasis on skills appropriate to the general world of work and meeting the needs of the employee. There clearly were some employers who felt that college-based training should be more geared towards providing skills appropriate to the company and meeting the needs of the employers, but it is worth noting that there were few extreme responses as regards what the colleges do, and should do. Most employers, in fact, appear quite happy that there should be a balance between the general and the specific and between the needs of the employee and the employer.

Figure 2.3: Balance between specific and transferable skills in training: employers' views

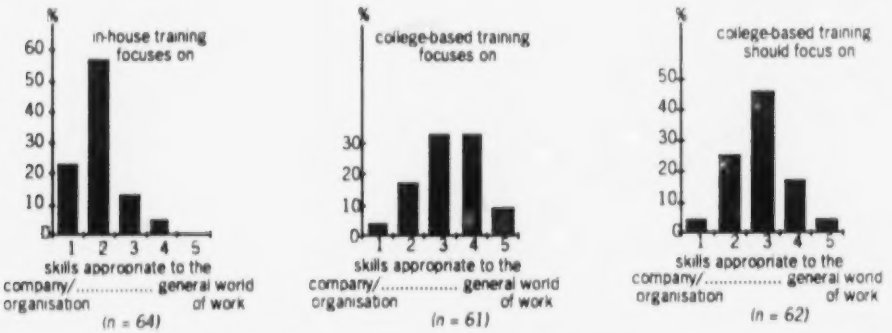
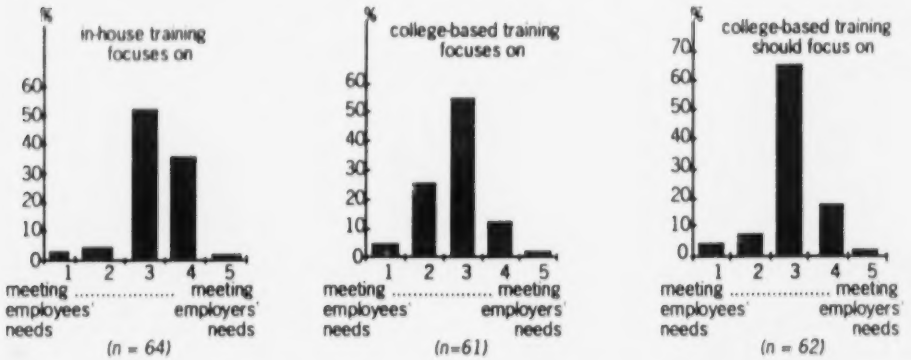


Figure 2.4: Balance between meeting employers' and employees' needs in training: employers' views



Overall, therefore, despite some misgivings about the commitment of trainees to training, and a suggestion that small employers in particular are sceptical about the value of training other than that which fits their immediate basic needs, there is evidence here that there is a perceived market need for the skills and competences nurtured by the National Certificate. In-house training and college-based training were both seen as having an important role to play. It is to the way in which learning should take place in such educational and training programmes that we now turn.

The National Certificate approach to learning

The relationship of practice to theoretical perspectives

Both in the interview study and in our questionnaires we tried to use constructs from the existing literature on learning (Black et al 1990) to understand how learning took place in National Certificate courses. We identified three main families of theories about learning in the literature. 'Rationalist' theories tend to stress the innateness of knowledge and make use of notions of general ability. 'Associationist' theories, in contrast, see the learner as an empty vessel into which particular items of knowledge can be poured by way of experience of the world. In between these, 'constructivist' theories see learning as a process of generalising rules and concepts from the raw data of experience. In our research it became clear that the language of learning theory was not the lingua franca of the groups we interviewed. Although we were able to identify aspects of lecturer discussion which could be explained in terms of some theoretical underpinnings, we felt that to do so was not truly to reflect the way in which 'learning' was dealt with by our respondents.

The one exception to this came in descriptions of some aspects of learning in what was clearly a rationalist frame of thinking. Thus, for example, in our interviews two Mathematics lecturers said that:

> "Mathematics seems to be a subject where some people have the ability to do quite well at it, fairly naturally, other people seem to have a problem ... I think it's something fundamental in the nature of the subject."

> "Mathematical ability is something you inherit."

Similarly, one Electronics lecturer spoke of Electronic fault-finding as 'an instinct' although teaching was thought to be necessary to enhance learning.

To test the hypothesis that responses could be categorised as making 'rationalist', 'associationist' or 'constructivist' assumptions about the learning process, we devised a set of question items which reflected common assumptions associated with these theories of learning. These items were included in the questionnaires for the teaching staff, students and employers. Factor analysis was used on the resulting data to determine whether there were consistent sets of attitudes, reflecting different views on the nature of learning, among the respondents.

The results of this analysis suggested that it was not possible to categorise either employers or students in this way, at least not using the data generated by our question items. However, a set of items which reflected 'rationalist' assumptions did serve to distinguish between lecturers, some of whom believed in the 'innateness' of ability and some of whom did not. This belief that ability is somehow innate is a key feature of those theories which we classified as 'rationalist'. Those who adopted a rationalist perspective were less likely to think that learning had improved through the introduction of the National Certificate. They were also less likely to be using student-centred teaching methods and to think that the perceived relevance of learning is a source of motivation.

Most staff held views which were not strongly 'rationalist', but we did find that the attitudes of staff varied according to which subject they taught. Compared to other groups, Maths teachers tended to believe more in this view of learning; Communication, Financial Record Keeping (FRK) and Practical Caring Skills (PCS) teachers believed in it to a far lesser extent. Electronics staff tended to adopt a position midway between the two.

It may be that these differences, especially those between Maths and PCS, simply reflect the expectations of teachers of different subjects, with Maths teachers expecting their students to arrive at college with a greater degree of previous knowledge of the subject than is the case with PCS teachers. It may also reflect the difference between an 'academic' and 'intellectual' subject like Maths and a much more 'experiential' and 'interpersonal' subject like PCS where the quality of relationships between individuals is at the core of the subject, and may be expected to be reflected in the teachers' own views on what their relationships

with their students should be like. In general, however, our finding was that ideas based on theories of learning had only a limited usefulness in helping us to understand how lecturers, employers and students describe the learning experience.

Perspectives on 'Action Plan priorities'

Another way to explore attitudes to learning was to ask about attitudes to some of the specific approaches to learning described in the Action Plan literature. In the questionnaire study we asked students, lecturers and employers a set of questions about the importance of allowing students to learn at their own speed, take responsibility for their own learning and learn how to learn. They were also asked about the extent to which they felt that learning in courses leading to the National Certificate nurtured these aspirations and competences. The results are shown in Table 2.3.

Table 2.3: The extent to which staff, students and employers regard approaches to learning as important in the National Certificate

The National Certificate modules—		Staff %	Students %	Employers %
• allow students to go ahead and learn at their own speed	*important—*	86	82	86
	true of NC—	54	50	66
• help students to be more confident in what they do	*important—*	94	91	96
	true of NC—	53	63	74
• make students responsible for their own learning	*important—*	88	84	—
	true of NC—	45	71	—
• help students learn how to learn	*important—*	93	83	91
	true of NC—	33	56	58
• encourage students to be aware of the ways in which they learn best	*important—*	92	87	91
	true of NC—	32	54	51
		(n = 358)	*(n = 1220*	*n = 65)*

It is clear that without exception staff, students and employers attached considerable importance to these aspirations. Inevitably perhaps, many of them felt that National Certificate courses were not entirely satisfactory in developing students in these ways. There were, however, significant differences in the extent of the difference between aspiration and perceived reality.

In general, lecturers were the least optimistic about National Certificate courses, and particularly about their success in helping students to learn how to learn and to take responsibility for their own learning. Students were more optimistic about this and they were more likely to claim that they were responsible for their own learning. Employers were generally the most optimistic about the extent to which National Certificate courses were successful in meeting these goals.

Limitations on approaches to learning

It is interesting to note that both staff and students indicated that for them the kind of 'learning' which took place in formal education was somewhat restricted. Lecturers drew attention to the considerable emphasis on passing examinations and one questioned whether this necessarily resulted in true 'learning':

> "We seem to get fairly good pass rates - and I think that's what SCOTVEC's after, a good pass rate ... I don't know whether they are actually retaining the knowledge!"

A similar stance was taken by one student who asked, "who says you learn?" For this student, 'learning' appeared to be a process you went through without gaining anything. Similarly, another student felt that very little was required to get the [Maths] module. He considered this to be an impediment for those who might need to use the Maths at a later date but who would not be able to because they had only been "storing, not learning".

In the view of some lecturers, learning in the context of formal education could not be entirely the responsibility of the students. One Mathematics lecturer felt that learning was something students "had done for them", almost on their behalf. For some lecturers, there seemed to be a division of responsibility for the process of learning. The initial stages of learning consisted of an expert starting the novice off, by "giving" the student the knowledge they required to be able to go further under their own steam. It was not a case that students should not be responsible for their own learning, more that they could not be.

There was also a feeling among some staff that the assessment system encouraged students to take a very passive approach to learning which involved little effort on their part:

> "Students, more than they used to feel, feel that it is up to me, the teacher, to pass them. That somehow the onus is on me to put ticks in boxes and not upon them to satisfy me in order that I put a tick in the box."

> "Students can get to the stage where they feel that they do not need to work, the system will pass them anyway."

Not all students 'chose' their particular method of learning - some had spoon-feeding methods thrust upon them because, due to limitations such as the time available, that was the only way the lecturer could see their being able to complete a module. In other cases it was simply a matter of using methods which were felt appropriate for the majority of students. Furthermore, some staff felt that many students needed confidence to be able to work on their own and it was important to them to have someone who didn't make them responsible for 100% of their learning. They felt that some mature students coming back into education after many years away from it may have backed off at the prospect of having to take on too much responsibility of this kind when they had come simply for a taster.

If some respondents doubted whether it was appropriate for students to take responsibility for their own learning, then they are in conflict with one of the fundamental tenets of the Action Plan. As noted above, much emphasis is placed on developing students' capacity to 'learn how to learn' and to take greater personal responsibility for learning. Clearly there are some staff, and some students, who for various reasons shy away from this. However, just because these aims are felt to be inappropriate for some students who have only just entered (or re-entered) the further education system, it does not mean that they are any less worthwhile as longer-term aims. There does seem to be a suggestion, in some of the interview responses, that there are those who feel that, because students cannot do these things straight away, there is little point in trying to develop them. This is clearly wrong. However, we had no indication from the interviews how widespread these views were.

Factors seen as likely to result in 'successful' learning

Notwithstanding these practical limitations on choice, we nevertheless wanted to know what was seen as likely to lead to 'successful' learning. By far the most commonly-mentioned factor was the motivation of the student. One lecturer claimed that this was:

> "The best thing to help them learn. A student who is interested in what he is doing will learn - You give him the project ... and he gets on with it. At the other end of the scale - and it can be in the same class - there's the [unmotivated] person [whom] you've really got to watch over and lead him through a lot of it."

As already said, mature students were identified by several lecturers as having a different attitude to their work. One claimed that "the older age group seem to be

really well motivated". This was seen as arising from their having chosen to come to college to study, either for a qualification for specific employment they have in mind, or because they have missed out on their earlier education, or purely out of interest. Many lecturers thought that younger students only viewed college as a means to an end (a certificate) or as a ticket to the next stage of the final qualification that they needed, and were not generally interested or involved in the work itself.

The employers added another perspective which was not voiced by lecturers. They felt that motivation was not just a function of differences amongst students. Differences amongst lecturers and in the way colleges dealt with students were also important.

One employer, in particular, was concerned about what she saw to be the task-centred nature of much modular learning. She felt that the main impetus in many classrooms was to get through the module, and that in some cases this took precedence over any consideration about students' motivation. In her experience, however, the extent of the problem varied according to the teacher's style and personality.

The same employer underlined what she saw as the need to develop motivation by giving students information. She identified one college as being the only one which sent regular progress reports on trainees:

> "In other colleges, it is abysmal. I scream at colleges. In one college, I don't know how many phone calls we must have made - maybe twenty - and a few visits. And I have not had one report for a trainee in a year. This is sick. You do not motivate trainees by not telling them what they've achieved, or not letting them see what they've still to achieve".

For her, motivation was central to good teaching practice. Once the teacher had established that he or she was interested in the individual students, then it would become much easier to get them to learn.

Differences within groups

Up to this point we have largely assumed that students, staff and employers were internally homogenous groups. There were, however, significant differences within these groups which are potentially important in themselves.

Overall, we found statistically significant differences between teaching staff in different subject areas in the extent to which they felt that National Certificate teaching was a source of motivation. PCS staff were most likely to think that teaching in the National Certificate motivated their students and Electronics staff least likely to think this. There was, however, no comparable evidence from students. We found no statistically significant differences related to the module being studied.

There were significant differences amongst certain types of student as to whether they thought that being responsible for their own learning was important. Those studying modules because of a YTS scheme tended to think that being responsible for their own learning was not important, as did those who were studying in order to help with their current job or because their employer said they had to. Students who were taking modules as preparation for going on to advanced courses were significantly more likely to claim that taking responsibility for their own learning is important. Those under 16 and those of 25 and over were more likely to think that learning at their own speed is important and those over 25 were most likely to think that modules should help them to learn how to learn.

The interview data also suggested that mature students were the most likely to see 'personal responsibility' and 'learning to learn' aspirations as important. This was striking in one (Electronics) class. One of the school leavers said that he was not as motivated as the mature students. He was further behind in his work. Sometimes the mature students helped him as he did not really know what he was doing. The others, having finished what was required for the module, were keen to solve their own problems, such as mending a car radio.

There were also statistically significant differences amongst the overall staff views in colleges. Those concerned with student learning, together with the

rank order of the six most 'positive' colleges out of the 20 sampled, are shown in Table 2.4 (colleges are referred to by numbers assigned by the research team).

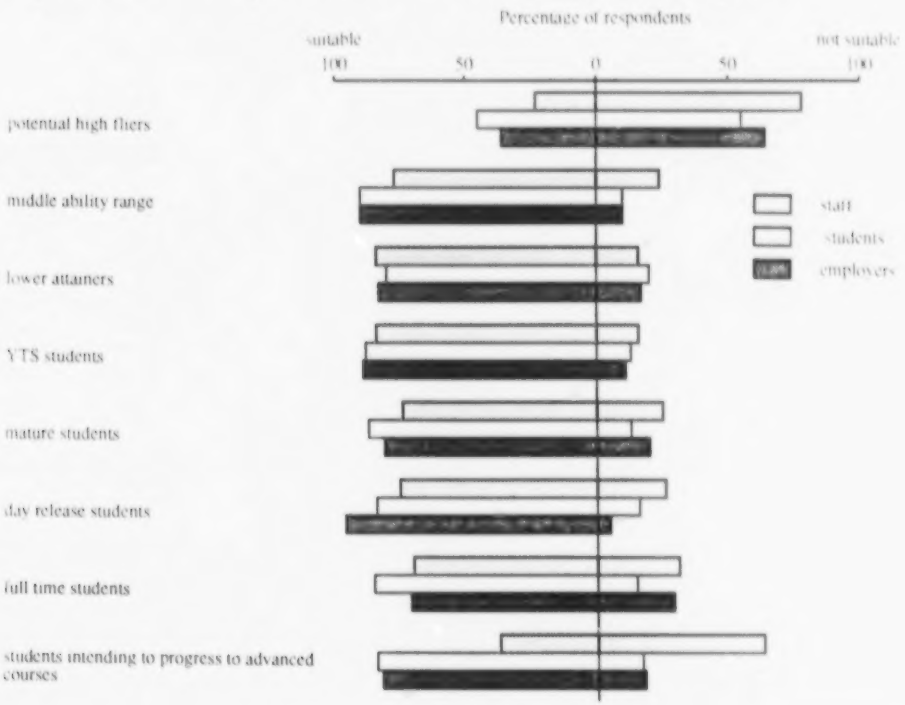
Table 2.4: Colleges where staff were most positive towards student learning

Staff—	Rank order of colleges (college reference numbers)					
	1st	2nd	3rd	4th	5th	6th
• agree that NC gives students scope for using their own ideas	*1	4	18	19	5	3
• agree that NC encourages students to work things out for themselves	18	20	10	1	11	14
• agree that NC demands more than memory from the students	10	1	18	14	20	4/7 (tie)
• think that NC has improved ways students go about learning	7	1	13	10	18	8/11 (tie)
• claim to use flexible learning methods	18	20	10	6	7	17
• claim to use open learning methods	18	1	20	6	7	17
• think that modules allow students to progress at their own speed	18	20	5	1	11	10

*college reference numbers

There were also several closely related significant differences between colleges with regard to a number of 'teaching' variables (see next chapter). Taking these together with the present 'learning' variables it was apparent that there were consistent differences between colleges in their reaction to the changes wrought in teaching and learning by the National Certificate. Four colleges in particular - numbers 1, 10, 18 and 20 - stood out as being particularly positive. In Chapter 5 we speculate on why this might be. Here we can note that the employer quoted above may be right to think that there are notable differences between colleges.

Figure 2.5: Suitability of NC modules for various groups of students



Differences in the suitability of the National Certificate for certain students

One area in which we hypothesised that there might be differences was the suitability of National Certificate modules for students of different backgrounds and different attainment levels. Figure 2.5 shows the extent to which staff, students and employers felt that National Certificate modules were suitable for various groups of students.

The first important finding from this is that there was clear general agreement that the National Certificate was suitable for all but a few students. It was seen to meet the needs of 'middle' and 'lower' attainers, YTS students, mature students, day-release students and full-time students. It was only where 'potential high fliers' and 'students intending to progress to advanced courses' were concerned that suitability became an issue. Furthermore, although there was a very clear majority of staff, students and employers who had doubts about its suitability for 'high fliers', it was only lecturers who were concerned about its role in meeting the needs of those who intended to progress to advanced courses.

Further insights into the reasons behind this were gained from the interviews. Some of these reasons related to learning and some to assessment (see Chapter 4). For example, there was concern that the lack of grading may be demotivating for higher attainers and there were also reservations about the extent to which the information on attainment was appropriate for the needs of students who wished to proceed to higher level courses. Staff also gave some reasons as to why they felt that 'low achievers' and 'mature students' had benefited. 'Low achievers' had gained because of what were seen in other contexts as the faults of the system, ie that it was relatively undemanding, it divided things up into easily-digested chunks, provided remediation and generally 'nursed' them through. Mature students gained because of the increased motivation they were seen to bring with them. It was almost as if they were seen as a group of highly motivated, questioning students who would transcend the limitations of the system, and who were motivated by the desire to learn and did not restrict themselves to simply collecting learning outcomes:

> "There's not the self discipline, particularly in the younger ones. I like mature students because they seem to be more motivated."

> "[Mature students are motivated because] they want to get it together. [Others are motivated] because they don't want to end up [doing] remediation on a Wednesday afternoon."

> "I think it's taken the stress and strain off the hardworking but not very able students ... I think they have been able to see that they can work hard and pass ... whereas before if they weren't very able, they could work hard all year and fail the exam ... I think it's a good system for that type of student."

Several reasons were given for the perceived inappropriateness of National Certificate for students of 'high ability'. These include: the inadequacy of National Certificate modules to prepare these types of student for going on to advanced courses; the idea that modules did not present the necessary challenge which was part of the hidden curriculum and which demotivated the better students, particularly in respect of the lack of grading; and the assertion that the National Certificate was 'simply not suitable' for the higher-ability student.

We had no information on the previous attainments of the students who completed questionnaires but we did know the reasons they gave for attending college. Hence we explored the extent to which students planning to progress to advanced courses held views which were significantly different from other students. The results did not support the views of the staff. There were significant differences in the extent to which they thought that 'making students responsible for their own learning' and 'helping students to develop study skills' were important. Students taking modules as 'preparation for going on to a more advanced course' were more likely to think them important than students taking modules for other reasons. As to whether the National Certificate actually prepared students for going on to advanced courses, those students taking modules for this reason were

more likely to think that they did prepare them. Staff, on the other hand, did not feel that this was the case. Thus it would appear that, while staff and employers made statements to the effect that the National Certificate was unsuitable for higher ability students in some aspects, the views of the corresponding group of students differed in this respect.

Overall views on learning

The observations which staff made, both in interviews and in written comments on the questionnaire, suggested the full range of overall reactions, as to the effect of the National Certificate on learning. First of all there were those who welcomed the changes without qualification, or who felt that the benefits clearly outweighed the disadvantages:

> "Students enjoy the challenge of finding answers for themselves once they have been shown the most effective way to do this and they have gained enough confidence."

> "These learning methods do, I think, tend to make the learning process more enjoyable for students and help them learn how to learn, how to work with others, etc. I am not convinced, however, that they actually learn and remember as much about the subject matter as they would if there was an end exam."

For others, who had more negative views, it was not necessarily the case that they disagreed with the principles involved: often it was rather that there were felt to be practical difficulties which prevented full implementation:

> "The principles of National Certificate modules and the 'non-traditional' methods are highly effective in promoting efficient learning. However, the practical implementation lags behind these ideas."

> "I think I understand and appreciate all the benefits of a student–centred approach. Not always possible within the confines of curriculum and resources."

Finally, there was also a further group of teaching staff who felt that the approaches to learning advocated in the National Certificate were simply not appropriate for some of their students:

> "Student-centred learning can be very effective but only with those students who are self-motivated at the outset."

> "Few students can figure things out for themselves. I am afraid they have to be told what to look for when they do an experiment."

Of the staff, 61% who completed our questionnaire had been teaching in further education before the introduction of the National Certificate. To obtain a more precise quantitative measure of views on learning they were asked whether they thought that the National Certificate had improved the way in which students go about learning—41% felt this to have been the case, 19% felt that there had been no change and 36% thought that it had deteriorated. These overall figures mask wide differences in the reactions of staff in different subject areas, as Table 2.5 shows:

Table 2.5: Changes in students' approaches to learning: views of experienced staff

	Communication	*Maths*	*PCS*	*FRK*	*Electronics*
	%	%	%	%	%
Improved	47	26	80	44	28
Deteriorated	29	42	0	38	59
	(n = 90)	*(n = 53)*	*(n = 15)*	*(n = 34)*	*(n = 32)*

('No change' and 'Don't Know' categories omitted)

We can see that there was a very positive reaction amongst Practical Caring Skills staff, and much more negative reactions amongst Electronics and Maths staff. This was consistent with other differences between subjects which we found.

It is also important to note that the overall staff response was very different from that of employers who were altogether more positive. When employers were asked the same question, only 8% felt that the approach to learning had deteriorated and 60% felt that it had improved; 18% felt unable to answer the question.

Whether these differences reflected some lecturers' unwillingness to change, employers' lack of detailed knowledge of the learning environment or different priorities attached to learning by the two groups, is difficult to know. Two things, however, are clear: the sample of staff responding to our questionnaire was evenly divided in their overall appraisal of learning in the National Certificate and the sample of employers was much more positive.

3 Teaching

Teaching in the Action Plan

The Action Plan (SED 1983) made relatively few references to teaching but the implications of what was said were profound. 'Didactic' approaches on their own were deprecated and instead a range of teaching styles was advocated—

> It is important that the content of the modules is not interpreted as only the acquisition of knowledge, since this view commonly leads to a didactic approach to teaching and learning ... A wide variety of approaches to teaching will therefore be required in order to cover the range of objectives listed in each module. (para 4.10)

Subsequent documents expanded on the styles of teaching considered appropriate. Methods which include working alone, in pairs and in groups were advocated. Discussion, debate, practical work, case studies, projects, assignments, simulations and work experience were suggested. Greater emphasis was to be given to student-centred learning, to heuristic methods, to motivating students through closer attention to their individual needs and to developing a constructive relationship between assessment and teaching.

Questions on teaching

Much of our interview data concerned the types of teaching methods that were used in teaching modules. In particular we discussed the changes in teaching methods that had been brought about by the introduction of the National Certificate with its emphasis on student-centred learning, and the appropriateness of these changes for the various user groups. These issues were the ones we chose to focus on in our questionnaire study:

Student–centred learning: What has been the impact of student-centred learning?
Teaching methods: What teaching methods were being used by lecturers?

- has the introduction of the National Certificate resulted in a change in teaching methods?
- what influences lecturers' choice of teaching methods?
- what are employers' views of teaching in the National Certificate?
- what are students' views on the methods that are used? - are they the ones they learn most from?
- did respondents think that teaching methods had improved?

The role of assessment: What role does assessment play in the teaching process? - does it support or act as a constraint?

Student-centred learning

Very few staff claimed not to be using student-centred techniques and almost two-thirds claimed to be using them 'to a large extent'. However, our interview data clearly suggested that 'student–centred learning' was interpreted rather loosely by many staff. At one extreme it seemed to be no more than a conscious effort to meet students' needs. Others went further and described approaches requiring greater involvement of students in the learning process and this progressed through to a total devolution of responsibility to the student. In this last case, responsibility for learning was seen as being on the student's shoulders, and the teacher assumed the role of classroom manager or facilitator of the student's learning.

There was also a difference in the extent to which staff considered student–centred learning to be an innovation. One member of staff had completely changed his approach to teaching (and his view of what learning was about), because of the student-centred approach of the National Certificate. Rather than

"dragging things out of them" he now thought that "the students bring things to the lessons". In contrast to this, one lecturer said "I thought the National Certificate was a writing down of what Maths teachers, in all places, have been doing for years ... Maths teaching has been student-centred for 100 years".

Lecturers were highly committed to the principles behind student-centred learning. In response to a set of questions in which they were asked to indicate the degree of importance attached to enabling students to work at their own speed, use their own ideas and work things out for themselves, 80% were at the positive end of the spectrum.

It was clear that there were significant differences between staff teaching different modules as to the degree of importance they gave to student-centred learning. PCS staff were most positive about it. However, staff in all subjects were less convinced that the National Certificate actually nurtured these skills, with only 26% thinking that it did so.

Some of the reasons for staff support of student-centred learning, and some of the reservations they had about its working in practice, were provided by comments written by staff on the questionnaire. A few staff offered it an almost unqualified welcome:

> "Student-centred learning is a great step forward and proving very effective. The modular provision has increased the need for resource-based learning and is of great benefit to students."

However much they agreed with the principles of student-centred learning, others felt that there were practical difficulties which prevented its full use. Principally these difficulties were time and resources:

> "I think that student-centred learning is the most effective approach but it is very difficult to implement in the time allowed for a module, especially with all the summative assessments required under the new module descriptor [for Communication]."

> "When the modules began, I used student-centred learning, students working in groups and working at their own speed. Now that the Communication requirements have changed in the last year, I have had to revert to whole-class teaching."

> "I would use a student-centred approach more often if class size allowed it."

A further group of staff felt that student-centred learning was inappropriate for students who lacked either ability or motivation:

> "Some students experience difficulty with [student-centred learning] as they are not always able to work independently to discover information. Others see it as an exercise where they can do little work and thus have to be monitored closely. Mature students adapt to this approach much more readily and conscientiously."

> "The groups I normally deal with do not have the ability to deal with these approaches. There is a common myth among educational theorists that the low ability groups will magically respond to a system which allows them to make their own decisions, with the teacher/tutor acting as a guide/facilitator (or whatever the current jargon is). What happens in reality is that very little learning takes place. A student once said to me 'When are you going to teach us something?' "

It is worth noting that the extent to which student-centred learning was felt to be being accomplished within National Certificate courses varied amongst colleges. This question was one of the variables which differentiated the most and least 'positive' colleges from the others. There was also a related group of variables in which the same colleges were also positive about the extent of team teaching, flexible and open learning, collaboration between colleges, and the adequacy of national and regional guidelines. All of these variables imply support from the college administration for their implementation. This suggests that student-centred learning is more likely to succeed in situations where an infrastructure has been established to support it.

Teaching methods

Student-centred learning is best thought of as a general principle on which to make decisions about student and staff roles in the teaching and learning process. But behind this principle lies the more specific matter of how teaching actually takes place. Our initial interviews and our analysis of the literature suggested that a wide range of methods is associated with National Certificate teaching.

In the questionnaire study, both staff and students were given a list of methods (see Table 3.1) and asked to give an estimate of the extent to which they are used. Perhaps the most obvious finding from this is the wide variety of teaching methods which are claimed to be in common use by both groups. It would have been very strange if 'work experience', 'teaching outside the classroom' and 'visitors from outside' had as large a part to play as group work or indeed teaching the whole class together. However, it would have raised serious questions about National Certificate teaching meeting the aspirations of the Action Plan if they had not featured as both staff and students agree that they do.

Table 3.1: Staff and student claims for the frequency of use of teaching methods

Percentages of staff teaching each module and students studying each module (in brackets) who claimed that teaching methods were used 'to a large extent' or 'part of the time'

	Overall % T S	*Comm* % T S	*Maths* % T S	*PCS* % T S	*FRK* % T S	*Elect* % T S
• teacher teaching whole class together	85 (91)	86 (94)	79 (82)	86 (95)	86 (83)	91 (98)
• students working or discussing in groups/pairs	89 (65)	99 (84)	71 (40)	100 (93)	83 (50)	86 (58)
• team teaching (ie two or more teachers in the class sharing the teaching) (nsd)	*[10 (13)*	*7 (9)*	*13 (18)*	*11 (8)*	*18 (16)*	*7 (17)]*
• allowing students to work through the course on their own and at their own speed (nsd)	*[62 (60)*	*62 (61)*	*65 (61)*	*57 (61)*	*69 (70)*	*55 (50)]*
• work experience (for full-time students)	23 (31)	18 (26)	6 (13)	92 (91)	18 (13)	12 (14)
• teaching outside the classroom (visits, residential, etc)	30 (17)	37 (23)	7 (6)	72 (54)	26 (6)	2 (5)
• visitors from outside college coming into the classroom	28 (15)	36 (14)	3 (4)	75 (53)	22 (3)	2 (2)
• practical work	67 (73)	51 (71)	47 (40)	93 (91)	91 (72)	98 (89)
• projects or assignments	90 (73)	97 (93)	81 (43)	98 (92)	86 (58)	86 (81)
• simulations or role play	51 (27)	80 (56)	7 (8)	75 (56)	48 (10)	7 (6)
• using diagnostic assessment to help students to identify strengths and weaknesses (nsd)	*[66 (88)*	*71 (84)*	*70 (89)*	*69 (88)*	*52 (93)*	*60 (84)]*
	n = 341 (1226)	*n = 138 (264)*	*n = 73 (238)*	*n = 39 (223)*	*n = 50 (241)*	*n = 41 (260)*

Figures in italics are not statistically significant at the 0.01 level

There were significant differences in the extent to which staff claimed to be using methods recommended in the Action Plan literature. PCS teachers claimed the highest use of such methods and Mathematics teachers the least. However, a certain amount of caution must be exercised in interpreting this finding. The appropriateness of methods will vary from subject to subject, as will their exact meaning (an assignment in Mathematics may be a very different thing from an assignment in Practical Caring Skills).

Perhaps more important is that there are several areas in which staff and students made different claims. Overall, staff said that projects or assignments, group work, and teaching the whole class together were the three modes of teaching which they used to the greatest extent. In contrast, it was the students' view that the methods used most often were whole class teaching, using assessment for diagnostic purposes and practical work. The disagreement about

diagnostic assessment was common to all subjects and is discussed at greater length below but is probably attributable, at least in part, to different understandings between staff and students. The disagreement about group work was, especially in the case of Maths and Financial Record Keeping, much greater.

Finally, it is worth noting that there was a significant difference amongst colleges in the extent to which staff claimed to be using the kinds of method recommended in the Action Plan. The colleges which were most and least likely to be using these methods were frequently those same colleges which claimed to be using student-centred approaches most and least as discussed above.

Changes in teaching method

The use of this variety of methods might of course not be new. We tried to measure the effects which the National Certificate itself has had in two ways. First we asked staff to estimate the extent to which they used 'non-traditional' approaches on a variety of courses they might have taught. We then asked them to indicate the extent to which they felt that they used the various methods more or less now than they had in their teaching of non-advanced courses prior to the National Certificate.

It is clear from Table 3.2 that staff claimed that they used 'non-traditional' approaches much more in National Certificate teaching than in any other types of courses. In some cases, and particularly Standard Grade, the data must be interpreted with caution as there are relatively low numbers of staff who have had experience of teaching them. But what is interesting is that two thirds of staff had taught non-advanced courses prior to the National Certificate and 80% of these claimed to be using 'non-traditional' methods at least to some extent more than they had previously.

Table 3.2: The extent to which staff said they used 'non-traditional' teaching methods in the areas in which they taught

	to a large extent %	*to some extent* %	*only very seldom* %	*not at all* %
• National Certificate (n=359)	65	30	4	1
• non-advanced further education courses prior to National Certificate (n=228)	35	41	18	6
• advanced courses (eg HNC, HND) (n=172)	29	37	22	14
• SCE courses (O and H) (n=209)	16	42	27	13
• SCE Standard Grade (n=47)	26	26	7	40
• English exam boards (O and A levels) (n=75)	17	25	21	33

Lecturers' responses about the extent of change in individual teaching methods showed a clear decrease in the use of 'whole class' teaching and corresponding increases in the use of other teaching methods such as were recommended by the original Action Plan and subsequent guideline documents (Table 3.3).

There were few differences attributable to subject and these could to a large extent be explained by the nature of the subjects themselves. 'Simulations or role play', in particular, are unlikely to be appropriate in modules such as Maths or Electronics, and this probably accounts for the low use of them reported by teachers in these areas. Financial Record Keeping and Electronics teachers reported particularly high increases in the use of practical work.

Influences on lecturers' choice of methods

In our interviews, several lecturers made it clear that they still saw a place for the teacher to be standing in front of the class telling them things. Indeed, very few of the staff who were interviewed could be said to have abandoned traditional

Table 3.3: The extent to which staff said they used certain teaching methods more or less than they did prior to the introduction of the National Certificate

n = 205	use this more now %	use this the same %	use this less now %	never used this %
• teacher teaching whole class together	1	36	62	0
• students working or discussing in groups/pairs	68	27	1	4
• team teaching (ie two or more teachers in the class sharing the teaching)	16	12	12	60
• allowing students to work through the course on their own and at their own speed	57	23	4	14
• work experience (for full-time students)	12	18	8	62
• teaching outside the classroom (visits, residential, etc)	20	33	18	30
• visitors from outside college coming into the classroom	16	34	13	36
• practical work	43	40	6	11
• projects or assignments	71	24	3	2
• simulations or role play	38	29	5	29
• using diagnostic assessment to help students to identify strengths and weaknesses	38	44	6	12

'chalk and talk' methods altogether, and few wished to. Rather it seemed that they now drew on a wider repertoire of techniques in their teaching. What was it that determined lecturers' choice of methods?

For at least some staff, more traditional didactic approaches were included in their teaching repertoire because 'variety' was seen as an important end in itself:

> "I think they like a varied approach, I think that's the thing ..."

For others, didactic approaches had attractions because they were seen as economic ways of teaching:

> "For me to give individual tuition to 20 students in book keeping I think is quite difficult ... the two minutes spent showing them something on the board can save an awful lot."

Much more common were those comments which suggested, not that 'non-traditional' teaching approaches were inappropriate, but that there were difficulties which prevented them being employed to the full. There were some staff who felt that the descriptors were too prescribed and left them little freedom of action:

> "The most unattractive feature is the necessity to adhere to rigid guidelines which allow little scope for imaginative teaching."

It was not made clear to us where these 'rigid guidelines' originated. Certainly, the descriptors themselves contain only 'suggested' approaches to teaching.

For other lecturers it was a lack of time and resources which constrained their teaching. The 'workload' which detracted from teaching was characterised by some staff as primarily 'administrative' while for others it was more clearly identified with the assessment system, which seemed to be operating counter to

'teaching' in two ways: first by taking up class time thus reducing the amount of time available for teaching; and second by occupying teachers' time with paperwork:

> "Suggested teaching/learning approaches are pedagogically sound but resources are needed to enable such methods to be satisfactorily implemented - both in terms of staffing and materials."

> "The stress laid upon 'testing' evident at the outset when the switch to modules was made in the mid-eighties seems to have increased, leaving little leeway for 'teaching'."

There is probably some truth in these comments but it must be said that they came from a minority of staff in each case. There is always a cost involved in innovation, although this is often offset by savings in time and resources elsewhere. The key question is whether the changes made are sufficiently valuable to make them worthwhile. It was to estimate the value of these methods that we asked employers which methods of teaching they preferred and asked students to indicate the extent to which they felt that they learned by using the various methods.

Employers' views on teaching methods

In interview, several employers stressed the view that successful teaching was dependent on the teacher's personality and whether 'he gels with the students' or whether or not he took an individual interest in the trainee. The age of the teacher was also thought to affect how well he or she adapted to trainee–centred approaches and new technology. Only one comment was made concerning teachers' background and this concerned the 'ideal' teacher: one who'd been practising in industry and 'who was qualified and had got the urge to go back to college and teach'. This suggests again that employers' main concern was the relevance of the theoretical side to the work situation, and that learning should take place in an applied context. These 'personal characteristics' variables are doubtless important but we were not in a position to gather data on these in this study. Nevertheless, it must be noted that in the teacher data we found no significant differences in the attitudes of teachers which were attributable either to age or previous background.

Other employer comments in the interviews related more closely to the kinds of teaching methods discussed above and it was apparent that they saw the National Certificate as an improvement on previous systems, if for no other reason than that it was seen to be closer to their ideal of practical, 'hands on' training. They made such comments as "anything's better than chalk and talk - what happens is better and deeper than that" and noted that teaching should be "participative, relevant, job-based, practical, and not lectures". Linked with this, there appeared to be a preference among employers for training to be on a day-release, rather than a block-release basis, as they preferred a system which enabled trainees to use what they learned at college rather than be bombarded with several weeks worth of information which was not taught in conjunction with work experience. However, there was some concern expressed by employers in interview that trainees were failing to remember what they had learned. They wished for teaching methods which would encourage better retention. This is a matter to which we will return in the section on assessment.

Students' teaching preferences

Table 3.4 shows students' responses to a question in which they were asked to indicate the extent to which they learned from the various methods discussed above. Students claimed to learn most from practical work, getting feedback from diagnostic assessment, and projects or assignments. They made surprisingly low claims for the efficacy of team teaching, learning outside the college, and simulations or role play, although this probably has to be treated with caution because these approaches were used quite infrequently.

It is interesting to compare the above data with the responses to a similar question asking students which teaching methods they thought were used. It was not always the case that students felt that they learned best from the teaching

methods that were used the most, nor was it the case that the methods used the least were necessarily the ones that students deemed to be of little value in helping them learn (see Table 3.5).

Table 3.4: The extent to which students said they learned from the teaching methods that are used

n = 1185	learn a lot %	learn something this way %	don't learn much this way %	haven't been taught this way %	don't know what this means %
• teacher teaching whole class together	39	56	4	2	0
• students working or discussing in groups/pairs	38	44	14	4	0
• team teaching (ie two or more teachers in the class sharing the teaching)	14	13	6	64	3
• students working through the course on their own and at their own speed	31	34	17	18	1
• work experience (for full time students)	31	12	4	48	5
• teaching outside the classroom (visits, residential, etc)	18	21	7	53	2
• visitors from outside college coming into the classroom	13	24	8	53	2
• practical work	63	27	4	6	0
• projects or assignments	46	41	8	5	0
• simulations or role play	15	27	17	37	5
• using diagnostic assessment to help students to identify strengths and weaknesses	48	39	7	5	1

Table 3.5: A comparison of the teaching methods used as perceived by staff and students, and a comparison of the efficacy of these

	staff claimed they used— (n = 341) %	students claimed to receive— (n = 1212) %	students claimed they learn best from— (n = 1185) %
• teacher teaching whole class together	27	72	39
• students working or discussing in groups/pairs	28	20	38
• team teaching (ie two or more teachers in the class sharing the teaching)	2	6	14
• students working through the course on their own and at their own speed	25	28	31
• work experience (for full–time students)	6	18	31
• teaching outside the classroom (visits, residential, etc)	2	4	18
• visitors from outside college coming into the classroom	2	3	13
• practical work	22	41	63
• projects or assignments	30	33	46
• simulations or role play	8	6	15
• using diagnostic assessment to help students to identify strengths and weaknesses	13	56	48

Students' perception of whole class teaching was that it was used a lot of the time but less than half thought that they learned a lot from this method. Students' views of the value of diagnostic assessment and their perceptions of its occurrence more or less coincided, although of course if staff views on the extent of use of this approach are considered, there would seem to be scope to place more emphasis on this. But perhaps most important is the disparity between the high value students place on practical work (as do employers) and the limited extent to which staff especially see it as being used. Once again, caution must be exercised here as not all subjects lend themselves to practical work and there are probably finite limits to the amount of learning which can be accomplished in this mode in any subject. Nevertheless, this is again an area which these data would suggest should be considered carefully by teaching staff.

Had teaching methods improved?

Asked whether these changes in teaching methods were an improvement or a deterioration, more staff thought they had improved (46%) than deteriorated (27%); 21% felt there had been no change and 6% didn't know.

The role of assessment in classroom teaching

Several references have been made above to 'diagnostic assessment', which may seem out of place in a chapter on teaching. However, it was clear in the Action Plan that assessment is intended to have a supportive role in the learning process. This was to be achieved by integration of the assessment procedures with teaching and learning and was in contrast to the previous system of summative assessment, which had a dominant but unsupportive effect on the curriculum.

Subsequent guidelines encouraged as much assessment as possible, both formative and summative, to be carried out in natural classroom contexts, and thereby minimising the need for specially created 'tests'. The changes in nature and range of assessment instruments used in the National Certificate reflects the move towards acknowledging the importance of the 'everyday', ongoing assessment which has always occurred but which has not previously received public recognition. It is these informal and formative assessments which were seen to underpin teaching and learning and enable individual students to make progress. This greater emphasis on diagnostic or formative assessment was also seen as part of the process of providing clearly defined goals for both lecturer and student:

> There are several important purposes of assessment which must be recognised. Assessment offers feedback on progress, diagnosis of individual strengths and weaknesses, assistance in making informed and realistic curricular and vocational choice, evaluation of teaching, as well as assistance in selection of employment and/or further stages of education ... In recent years assessment has tended to become more integrated with the processes of learning and is seen as having a diagnostic rather than a discriminatory value. (SED 1983 para 4.23)

We have already seen that about two thirds of staff claimed to be using diagnostic assessment and 38% of staff claimed to be using it more in National Certificate courses than they had before. We have also shown (in Table 3.1) that 88% of students claimed that their teachers used assessment in this way. These figures are high and may probably reflect an interpretation of diagnostic assessment as the repeated opportunity to retake summative assessments until they have succeeded.

This interpretation is supported by some comments from students who valued the frequent feedback given as a result of continuous assessment because 'you know whether you're doing it right or not, that's the thing'. That is, you know how well you're doing rather than having to wait for 'the great guns' of an exam to find out, possibly wasting a whole year if you fail the exam, whereas for modules it wasn't so bad if you just lost one. Overall, 88% of students considered the opportunity of feedback from continuous assessment to be a source of motivation to learn: a rating which ranked highest amongst eight possible sources of motivation they were asked to consider.

Staff also gave this their highest rating, with 79% considering feedback to be a source of motivation. Their comments also suggested that they were well disposed:

> "It is probably a distinct advantage in that you can miss people who are very good at hiding that they're not actually achieving anything - sometimes they're lazy, they don't want to, and sometimes because they are actually struggling ... whereas if you actually give it an assessment it has to come back to you, and you have to mark it all, it does show up ... the difficulty is that you can spend a great deal of time marking."

> "I think if you are going to do investigation/evaluation type things then you have to ensure that you get the work in fairly quickly, and look at it, and feed back quickly."

> "They learn through all the different formats of assessment, they learn where they're at, where they're aiming for. Even though it's assessment they can actually see a goal through that and they can learn things that they can put right for the future."

These comments suggest a somewhat weak interpretation of 'diagnostic assessment', because it is not clear whether or not the assessment is based on methods which are designed to identify the reasons for students' learning problems. But earlier work in this area (Black *and* Dockrell, 1984) suggests that, provided the teacher is willing to act as a 'remedial resource', such 'trip wire' diagnostic instruments can have appreciable positive effects on student learning. Given the juxtaposition of student-centred learning, especially where this is interpreted as an approach in which the teacher's role is as a facilitator, it may well be that the National Certificate model has been more successful than others in nurturing a worthwhile relationship between learning and assessment.

General views on teaching

The majority view of all groups was that teaching methods in the National Certificate were a source of motivation for students to learn. About 70% of both staff and students held this view, and less than 10% of both groups felt that teaching methods were demotivating. However, employers were slightly less convinced that this was the case. One in five employers claimed that teaching methods were actually demotivating. Smaller companies (with fewer than 200 employees) were likely to be least convinced in this area.

Although 40% of employers stated that they 'didn't know' the extent to which methods of teaching had improved or deteriorated, only 25% were convinced that they had improved. This compares with 46% of staff who did claim that they had improved. These differences may be attributable to different expectations amongst employers. Our findings described above suggest that employers were supportive of the general thrust of National Certificate teaching towards practical student-centred approaches. Perhaps, however, this has not gone far enough. On the other hand, the negative responses from a minority of employers may be likened to the misgivings which some of them had about certain features of the assessment model, which will be discussed later. Whatever the reason, there would seem to be a suggestion in these data that although teachers, staff and employers were broadly supportive of the change to teaching brought about by the Action Plan, there is still scope further to refine it, the better to meet the needs of all employers.

4 Assessment

Assessment in the Action Plan

In an earlier study on assessment in the National Certificate (Black, Hall *and* Yates, 1988) we identified five key features of assessment in the Action Plan. These were:

- it sets out to describe what students have done rather than purporting to 'measure' some notional underlying 'ability', thereby clarifying the goals towards which students and teachers must work to ensure 'success'
- it assesses students against what are intended to be clearly defined performance criteria and not by judging them against the performance of others
- the decision on student attainment is school- or college-based with substantial emphasis placed in most cases on continuous assessment during the teaching of the module
- the model embraces broader purposes than summative assessment for certification, placing considerable emphasis on diagnostic assessment
- students' performance is recorded as a detailed profile of the learning outcomes they have mastered in completing the modules they have studied.

The National Certificate assessment model is criterion-referenced, college-based and offers a profile of attainment. As we showed in the chapter on teaching, it places emphasis on the diagnostic or formative potential of assessment and hence offers strong articulation with teaching and learning.

Questions on assessment

As the literature on assessment is less associated with 'grand theory' than with its role in servicing the needs of education (Black, Hall *and* Martin, 1990), we did not lay particular stress on exploring views on 'theory'. In our interviews we discussed assessment matters within a broad agenda, but addressing specific areas such as whether the National Certificate assessment system was seen to be appropriate, and the changes that had taken place as a result of the implementation of the National Certificate. The issues which arose were dominated by discussion of the advantages and disadvantages of continuous assessment in contrast to a system which included examinations at the end of the 'course'. Other matters which arose were discussions of assessment methods and concern about systems for quality assurance. These were the issues which we pursued in the questionnaire study. The specific questions we addressed are therefore as follows:

Assessment methods: What assessment methods are being used by lecturers? How do they relate to the recommendations in the National Certificate and Action Plan literature?

Continuous assessment or end-exam: How did respondents feel that the continuous assessment approach adopted compared with the alternative strategy of summative assessment based on an end of 'course' examination? And in detail, which of these approaches did they think would be the more effective in:

- making sure that students remember what they learn
- making sure that students learn everything in the course
- making students want to learn
- helping students to see how the course fitted together

- rewarding students for their success
- helping students to learn
- selecting students for employment or for advanced courses
- differentiating levels of attainment
- giving other people a clear idea of what students can do

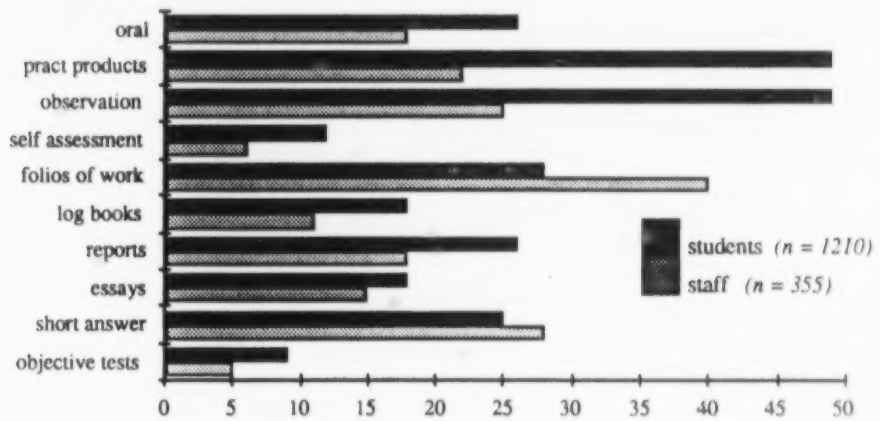
What comments did respondents choose to make on assessment?

It is interesting and worthy of note that in our interviews and questionnaire data, few, if any, respondents chose to mention or discuss some of the key aspects of assessment which were introduced by the National Certificate. Working towards known goals, assessing against performance criteria, and college-based assessment were not on the agendas of our respondents. Indeed, the absence of any mention of them suggests that the criterion-referenced and college-based or internal assessment features have been taken on board and accepted as part of the system. Thus it is encouraging to note that the introduction of the National Certificate and the implications for change, especially in regard to the system of assessment, have, by and large, been accepted, at least in principle.

Assessment methods used

One of our aims was to find out what modes of assessment lecturers and students said were used in the National Certificate and also the extent to which they were used. Their responses are shown in Figure 4.1 below:

Figure 4.1: Assessment methods used in the National Certificate



All of the methods listed in the questionnaire were claimed to be used by both students and staff. To the extent that these were a suitable choice for the learning outcomes being assessed, the aim identified in the Action Plan of encouraging the use of a variety of appropriate methods has obviously been achieved. As might be expected, however, the range of assessment methods varies between subjects —Communication and Practical Caring Skills staff using a wide variety of methods, with PCS staff making the greatest use of self-assessment; Mathematics staff using mainly short answer questions; Financial Record Keeping staff making the greatest use of objective tests; and Electronic assessments being dominated by practical assessments, observation and short answer questions. Also from the figure above we can see that, according to both groups, assessment in the National Certificate does not appear to be dominated by objective tests and short answer questions, as is sometimes alleged.

By far the most commonly used methods of assessment, according to the students, were those based on observation and practical work. This suggests a move away from the more traditional modes of assessment to more teacher-

based practical approaches. However, there is clearly some discrepancy between this view and that of staff. The most used form of assessment from staff responses was that of folios of students' work, with 40% of the staff claiming that they used this 'to a large extent'. 'Observation of students working in class' and 'teacher marking the products of students' practical work' were also ranked high, but lecturers did not place nearly as much emphasis on this as students. The discrepancy can in part be attributed to the fact that some variation existed between the responses from students in the different subject areas. However, it is quite likely that part of the reason lies in students misinterpreting the consequence of a teacher 'looking over a student's shoulder at their work' which the student may be classing as 'assessment by observation' but which the teacher simply sees as offering formative help.

These data to a large extent confirmed our findings from the interview study. A wide variety of methods were used by lecturers who had few reservations about this. However, staff did have reservations about the adequacy of the guidance given in the descriptors concerning assessment. Some written comments on the questionnaire indicated a hope that more help might be provided:

> "Some of the descriptors are written in unclear terms - clarity is certainly lacking - the Communication descriptors are an example of how not to communicate, and are a nightmare to administer."
>
> "As senior lecturer with responsibility for support of new part-time/untrained staff, I have to 'translate' into normal English all too often (the assessment/performance criteria parts of module descriptors)."
>
> "I do not believe that assessment guidelines are sufficiently specific to ensure a national standard. Why does SCOTVEC not provide a bank of questions from which we can draw assessment material?"

Closely allied to this was a feeling, held quite strongly by some lecturers, that the assessment requirements of modules were simply too easy. This was not only because assessment could be undertaken in 'little chunks', 'one bit at a time', but also because these 'little chunks' themselves were often thought to consist of items which were easy. Little was offered by way of explanation of what was meant by 'easy', or why 'difficulty' should, by itself, be thought a virtue. One Maths lecturer observed that the advice and guidance he had received on techniques of assessment had concentrated on the 'lower end of the scale' and there was little or nothing available about assessing higher levels of ability. This, and similar comments, contributed to a general view that modules were not entirely suitable for students who were considered to be of 'high ability'.

Continuous assessment or an end-exam?

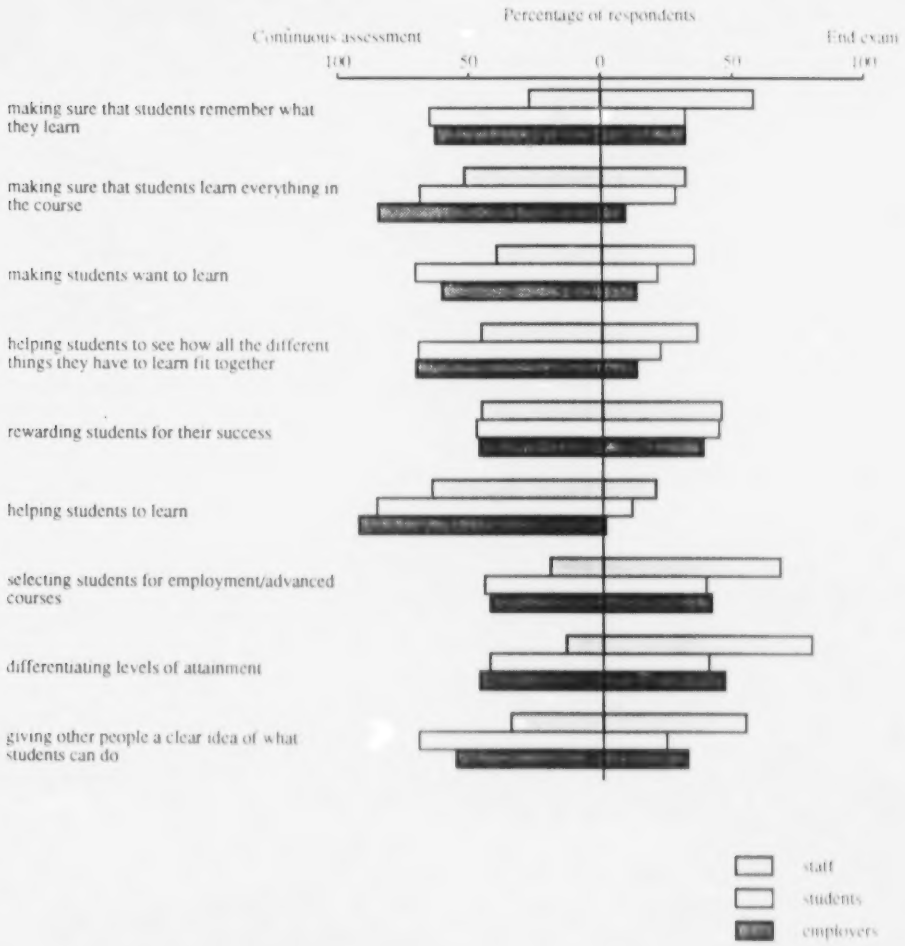
Our interview data indicated that, although it produced its own pressures, most students preferred continuous assessment to an end-exam, even in cases where learning seemed to be dominated by assessment. Staff had very mixed views and there was a strong suggestion that they had doubts about continuous assessment being sufficient in itself. Employers tended to be supportive of continuous assessment, although there were areas in which they seemed to prefer end-exams. The range of issues covered by respondents in discussing their preference for end-exams and continuous assessment was substantial. In the questionnaire study we therefore grouped these into nine areas and asked all three groups which mode of assessment best served these goals. A comparison of the outcomes is shown in Figure 4.2.

Making sure that students remember what they learn

65% of students and almost the same proportion of employers felt that continuous assessment was more likely to result in students remembering what they learned than was an end-exam. In contrast, 58% of staff felt that the end-exam was more effective in this respect. In another question in which staff were asked to indicate the degree of importance they would attach to 'ensuring that students remember what they learn long after they are assessed', 94% of staff rated this as important

and 83% of them felt that the National Certificate was not effective in this area. Even allowing for the natural tendency to see any system as less than ideal, there is clearly a very widespread feeling amongst lecturers that the National Certificate is failing to achieve something which they consider to be important. The qualitative data suggested that this 'something' was the ability to see the 'whole' which is greater than the sum of the parts, and to provide a check on whether students have retained the knowledge they have gained.

Figure 4.2: Staff, student and employer views on the relative benefits of end-exams and continuous assessment


Percentage of respondents
Continuous assessment
End exam
100
50
0
50
100
making sure that students remember what they learn
making sure that students learn everything in the course
making students want to learn
helping students to see how all the different things they have to learn fit together
rewarding students for their success
helping students to learn
selecting students for employment/advanced courses
differentiating levels of attainment
giving other people a clear idea of what students can do
staff
students
employers

Note: the 'don't know' category has not been included ie the percentages do not total 100%

Insights from lecturers' written comments on the questionnaire and from the interview data confirm their conviction. Their preference for an end-exam to ensure a greater degree of retention is made clear in these written comments:

> "The National Certificate modules are effective in showing students their progress through a course of modules but I feel an end of module exam would be beneficial in showing a prospective employer that the student has gained the knowledge from the modules and retained it, and he is able to use this information in a work situation."

> "The assessment methods also encourage students to learn and forget, which may produce an end product of the students knowing the topic they were assessed on at the time of the assessment but by the end of the module they will have forgotten. For this reason I think it would be better to have an end-examination with the continuous assessment being used as part of the total assessment."

Further analysis of the qualitative data from employers and students confirmed the pattern of perceptions shown in Figure 4.2. However, the minority viewpoint of employers was not dissimilar to that voiced by lecturers:

> "You can pass a learning outcome every two weeks OK but I question whether they'll be able to retain it for a year, and that's the other question on this. End testing may not be the ideal solution to examine people but we haven't got anything better at the moment. Maybe I'm old fashioned ... but I genuinely believe that you've got to discipline people to prepare for exams over a full academic year's work, then test them."

There was no similar stance in student comments but the notion of a more rigorous approach to assessing retention was not entirely eschewed by them. Although most were relieved that they didn't have to remember what they learned, others were more long-sighted and claimed that 'an end-of-module test may be a good idea - it would be harder but you'd probably take it in more'. The reference here to an 'end of module' test as opposed to an 'end-of-year' exam is important. This alternative was not explored in our questionnaire and it underlines the fact that continuous assessment through the module and end-of-course examinations are at opposite ends of a continuum. If it is the case that the present approach in some modules is not an adequate measure of retention, it does not follow that the only alternative is to return to traditional major end-of-course examinations.

Making sure that students learn everything in the course

Substantial majorities of staff, students and employers thought that continuous assessment was much better than an end-exam for making sure that students learn everything in the course. Employers welcomed the fact that students would have to do all that was included in their programme and could not ignore parts of it and gamble on the exam:

> "They've got to cover the whole syllabus. If they have got a weakness they're better revealed than the old City and Guilds system."

> "I think what they're doing in continual assessment is good, because after all, it's the old argument, if you take a course - 100% being the course, at the end of it maybe 20% of it is examinable as such, and you answer five out of twenty questions so end up with another quarter of that ..."

Similarly, a lecturer 'conceded' that:

> "The one thing it does have an effect on is they've got to try to keep up to date. It's not a question of doing five subjects and hoping four of them come up in a final exam."

There would seem to be little argument, therefore, that continuous assessment is felt to be the more effective approach in ensuring detailed coverage of the course. If this were the case, one wonders why the material would not be retained. Substantial and more detailed work on actual student attainments both in the short and in the long term would be necessary to understand this further.

Making students want to learn

There are three things notable about respondents' views on whether continuous assessment or an end-exam is more effective in making students want to learn. First, although more staff felt continuous assessment to be effective for this, the majority was only slight. Second, this was one of the areas in which students felt continuous assessment to be most advantageous. Third, although employers were convinced that continuous assessment had the edge in making students want to learn, it was the question in which the largest numbers responded that they didn't know (25%).

To a large extent, the reasons staff gave for feeling that the assessment system did not 'make students want to learn' were couched in terms of its effect on motivation. It was asserted that the lack of an end-exam meant, amongst other things, that students had little to strive for and no incentive to retain knowledge, and that the lack of grading was particularly demotivating for the more able students:

> "'Assessment' becomes all-important, especially to the weaker student. Yet it is in too many cases the great leveller, not differentiating between the less able and the more able students. The latter, seeing this, stop trying."

> "The present National Certificate ... system does not motivate the more able students and can produce a pedestrian, unenthusiastic approach generally."

The view was also expressed that the standards set by the performance criteria are minimum standards with no incentive for students to go beyond these. This was a major concern for some staff.

In contrast, when we asked students which aspects of the National Certificate they considered as motivating students to learn, it was clear that the summative assessment components detailed in Table 4.1 were important. However, the motivation arising from the absence of an end-exam and opportunities for assessment resits may be more of a reflection of reduced anxiety than of making students want to learn.

Table 4.1: The extent to which students consider aspects of the National Certificate as motivating students to learn

n = 1180	*highly motivates students*	*motivates students*	*has no effect on student motivation*	*demotivates students*	*highly demotivates students*
	%	%	%	%	%
• opportunity of feedback from the continuous assessment	32	57	9	2	0
• no end-exam	40	23	22	12	3
• lack of grading	11	21	36	26	5
• opportunities for assessment resits	38	37	14	9	2

Helping students to see how the course fitted together

This question was included because of fears expressed by some staff during interview that continuous assessment might limit the overview which students obtained as they progressed through series of modules. As Figure 4.2 showed, about 40% of staff felt that an end-exam would be more effective, as did about 20% of students and 10% of employers.

In interview, only one employer expressed a worry that modules could lead to fragmentation and a lack of coherence in a student's work. In his view, an exam covering the entire programme might have the beneficial effect of facilitating an understanding of the relationships between modules.

Fragmentation was a cause of concern for many lecturers. Some feared that the process of 'notching up' learning outcomes does not encourage students to see their area of study as a whole but only as a collection of disparate elements. This leads to a fragmentation of the subject of study, a compartmentalisation of knowledge, and contributes to a lack of understanding:

> "I think in many cases they're not fully understanding what they're doing. There's a tendency for so many of them ... to say 'Oh, there's a learning outcome, I want to get that out of the way and get on to the next one. All I've got to do is pass the assessment and then that's that out of the way' ... thinking that once that's out of the way that's it finished, they'll not see it again."

> "An exam to some extent would string together the relevance of related modules. They [the students] have to be put into a frame of mind where they say that the first module and the tenth module are part of a related course and not isolated packages that don't have much relevance to each other."

However, for one lecturer at least, the basic notion of a modularised curriculum was inappropriate:

> "For academic subjects, particularly for Mathematics, you can't isolate, you can't break down Mathematics into little watertight compartments ... it's not giving them an overall understanding of the whole thing together..."

But despite these comments it is important to recall that in all three groups there was a clear majority who felt that continuous assessment would be more effective. It may well be that the agreed value of continuous assessment in helping students to attend to everything in a course outweighs the danger of a modular system compartmentalising teaching and learning.

Rewarding students for their success

The distribution of responses to this question was unusual in that students, staff and employers were evenly divided on it. About half felt that continuous assessment was better than an end-exam but very few gave their reasons for this. In contrast, those who felt that an end-exam would be better tended to explain their position more clearly.

The ready availability of remediation and the opportunity to resit learning outcomes was seen by some employers as impeding the appropriate reward for success.

> "There's no indication that a chap who passes a learning outcome the first time is any better than a chap who takes three attempts to pass a learning outcome. This is where they feel deprived in some way or other. Some of the lads who are keen and work and they get it first time feel they should be held a bit above the ones who are taking longer."

A few employers also felt that an end-exam was important for the credibility and value of the National Certificate, rather than for any intrinsic merit to be gained by going through the discipline of the examination process itself. Quite why this would confer greater credibility was not made clear, although it is possible that differentiation which is often associated with end–exams is seen to be an appropriate reward for success (see below).

Staff did not make this point but they clearly had strong views from an 'insider's' perspective. There were repeated assertions that some students were taking advantage of the availability of resits of assessments by sitting their first one in the knowledge that they would fail, solely to find out what type of questions they would be asked:

> "Assessment procedures are totally inadequate. Most students commencing a modular programme are fully aware that they are permitted (in theory) an infinite number of resits. Aware of the facts it is very common for students to ask for a first attempt, see the paper, and gather exactly what will follow in the resit. ...Therefore it is not uncommon for students to take 5 or 6 attempts at one learning outcome."

It is difficult to know what comment to make about this. Certainly, if students were to be allowed to resit exactly the same assessment, using the same assessment instrument, then the validity of the assessment would be destroyed and the result should be unacceptable. If, however, assessment instruments are sufficiently different, and each is valid, then all that the student has gained is the sort of formative information which should be available to him or her in the classroom in any case.

Helping students to learn

The one issue on which there was the largest general agreement that continuous assessment was preferable to an end-exam was that of 'helping students to learn'.

Nearly all the employers, around 90% of the students and 65% of lecturers felt this to be the case. The only note of caution was from some staff and employers who felt that some students who planned to progress to advanced courses where they would be faced with end-exams could be disadvantaged because they had not built up their exam technique.

This positive stance on helping students to learn was also clear from our interview data, as the statements below show. Nevertheless it is worth recalling that while there is clear support in principle for formative assessment, in practice, as we indicated in the 'Teaching' chapter, there was some doubt about the extent to which staff felt that it was being practised systematically:

> "[In the old system] they only knew they couldn't do it right at the end ... but you find out very quickly [in National Certificate] because you're doing continuous assessment."

> "I think it's useful to the students, as well as to the teacher ... the person knows where they are ... they know they've achieved a learning outcome or performance criterion which motivates them to go on to the next one. From the teacher's point of view, if they fail something, they know they can pick it up and present it to them again."

Selecting students for employment or for advanced courses

Students and employers were evenly divided in their response to this question, but only 20% of staff felt that continuous assessment would be preferable for selection purposes. There was, however, little in the way of detailed explanation for this in the interview data.

Differentiating levels of attainment

Once again, students and employers were evenly divided on this matter, although it is noticeable that a number of students felt unable to answer the question. Staff, more emphatically than on any other question, felt that an end-exam would be more successful in differentiating levels of attainment. Large majorities of staff and employers thought that differentiation was important but that this was not achieved in the National Certificate.

However, some employers only wanted to know whether a student had 'passed or failed', and so the potential of the system for further discrimination was not considered important:

> "Whether someone gets a distinction, a credit, a pass or a fail - it's nice to know and it certainly can be, on occasions, put to use. But, truthfully, we want to know if they have passed or failed."

For others it was much more of an issue and was, in some cases, causing them problems. This was especially so when they wished to plan ahead in their training and sort out those students who would go on to advanced training. For this purpose some form of discrimination between students, and prediction of their future capabilities, was felt to be necessary:

> "In order to run a coherent staff development scheme for craft apprentices through into the professional engineering grades and/or to university, we really do have to have better discrimination than the 'go/no go' gauge which is presently offered by the SCOTVEC modules."

> "It's difficult for me to recognise the high fliers - which we've got to do in a company like this. It's difficult for me to recognise someone who has just managed to get modules and still pushing them forward for higher education, wasting a year because they normally fail in the first year. I can't recognise these individuals, which I could do before."

> "How do you recognise when individuals have reached their limit? I don't know ... the system's colourless now. Before there was enough in the system to separate the wheat from the chaff, and also give you all the shades in between."

Needless to say, those views beg many questions. Why, for example, were the employers unable to identify learning outcomes which represented the kinds of

competences necessary to go on the advanced training? What is meant by 'reach their limit'? Is it a function of 'general ability', motivation or interaction with the teacher? One would have to be more convinced that the avenues for discrimination already available in the National Certificate had been fully explored before change became the self-apparent solution.

Staff comments on this question were less concerned with the utility of grading to end-users than with what they saw to be the unfairness of a system which did not grade attainments:

> "The biggest frustrating feature of the National Certificate is the inability to award those who work very hard and obtain GOOD results with anything other than a 'PASS'. The piece of paper becomes meaningless if two students have it and the first worked long and hard to obtain it, while the second barely made it to the classes and appeared only for the 'important' assessments."

> "The other criticism that a lot of them, of course, level, is the fact that there's no kind of merit, you know, in getting through first time ... if I were in the system I don't think I would like it, I think I've been brought up to like competition and I think students are basically the same."

The discussions we had with employers during the interview study were not, however, confined to differentiation solely on the basis of grading. For some of the employers, an end-exam was almost a test of character or a rite of passage which all students should go through:

> "The ease by which a student obtains the learning outcomes, there's no doubt whatsoever, that that has demeaned the standards ... But we're back to this business of challenging the individual, building up this grit, in the cycle, as opposed to the academic knowledge in the business—that has gone from it ... There should be enough of a challenge and a climate set, apart from the academic knowledge, to build character into a person, and that's not there."

One item in the questionnaire attempted to measure the extent of this feeling among employers by asking how much importance they attached to developing 'staying power and determination'. The responses confirmed that they did value the idea of education instilling such competences, and that a majority of them felt that this was not achieved by the National Certificate. However, it has to be said that this begs the question of whether changing to an end-exam would be the solution. If such personal characteristics are important they could be assessed and reported in the same way as any other intended outcome of education. The problem is that achieving an agreed definition of these traits and making reliable assessments of them is difficult and time-consuming as well as controversial.

Giving other people a clear idea of what students can do

As Figure 4.2 showed, students were the most likely group to feel that continuous assessment, more than an end exam, indicated to others what they had achieved. This is perhaps not surprising given the vested interest that they have in obtaining usable qualifications. What is notable is that 56% of employers took the same view but lecturers, yet again, were more convinced of the utility of end-exams.

The interview data suggested that some staff and employers were concerned that employers would find it difficult to deal with the amount of information available and the potential variety from student to student. This led some to a call for recognisable qualifications, akin to 'group certificates' which, it was noted, were to be retained for advanced level courses and which would simplify the detail on student attainment:

> "We want that accreditation to be recognisable, to be able to categorise it so that one can say, well, that means something. A bit like the decision just now to keep the advanced certificates in groups and still have HNC, HND. To us as a company that's a good decision."

However, some employers positively welcomed the breadth of information on student attainment now available to them:

"I favour passing modules, or partial modules, and saying these young people can do that, let us be satisfied with that [rather than] all sorts of three hour exams at the end of it where they might, with pot luck, get questions they can do, or with bad luck, get questions they can't. I think it gives the employer a broader measure of achievement."

Clearly these views were contradictory. In our questionnaire study we therefore asked employers whether they found the information on student attainment useful. 56% replied that it was, while 44% either thought that it was too unwieldy to be useful or that, while it was useful, it was nevertheless difficult to cope with.

These findings would seem to suggest that this group is somewhat divided on the issue. Some of those whom we interviewed represented the view of smaller employers and it is not unlikely that they could have more problems because they are less likely to have recruitment and training specialists. Whether the answer is in giving employers better support in interpreting National Certificates or in altering the way in which such information is made available to them must be open to debate.

Differences amongst subjects

One aspect of the data which the above discussion has concealed is that there were several notable differences in view amongst staff from different subject backgrounds. The detail of those differences is shown in Table 4.2.

Table 4.2: Staff preferring continuous assessment as practised in the National Certificate to an end-exam

Goal	Comm %	Maths %	PCS %	FRK %	Elect %
• making sure that students remember what they learn	33 (49)	12 (74)	49 (28)	29 (56)	0 (95)
• making sure that students learn everything in the course (nsd)	*46 (36)*	*55 (30)*	*62 (14)*	*65 (30)*	*42 (44)*
• making students want to learn	40 (36)	33 (37)	57 (14)	51 (28)	21 (60)
• helping students to see how all the different things they have to learn fit together	49 (31)	28 (42)	79 (12)	42 (49)	42 (44)
• rewarding students for their success	44 (46)	44 (46)	58 (28)	60 (38)	26 (71)
• helping students to learn	69 (21)	49 (22)	84 (7)	76 (15)	48 (33)
• selecting students for employment/advanced courses	22 (63)	12 (69)	42 (44)	19 (76)	12 (86)
• differentiating levels of attainment	20 (71)	4 (90)	21 (68)	11 (85)	7 (88)
• giving other people a clear idea of what students can do	36 (50)	23 (60)	57 (32)	44 (54)	20 (76)
	n = 141	*n = 76*	*n = 42*	*n = 53*	*n = 42*

Figures in parentheses are percentages of staff who preferred an END EXAM.
Figures in italic are NOT statistically significant at the 0.01 level

The two obvious 'extreme' perspectives are those held by Practical Caring Skills (PCS) and Electronics staff. There is a clear pattern of preferences amongst PCS staff for continuous assessment for everything except selection and differentiation. In contrast, more Electronics staff prefer end–exams for everything except 'helping students to learn', a preference which is shared only by the Maths teachers who, however, are more evenly divided on it.

Moderation

Our interview data suggested that there was some concern in colleges about the effectiveness of the moderation system. Some lecturers had little idea about what was happening in colleges other than their own and this led to a lack of confidence

in the system. They were saying such things as:

> "I'd like to see if national standards are being maintained. I'd like to see exactly what another college is doing for a particular learning outcome and how it differs, if it does differ, from what we do."

We were concerned to find out the extent of this feeling and so we asked staff to rate their level of satisfaction with various aspects of the moderation system. As we can see from Table 4.3, 54% of employers were at least partially satisfied that a national standard exists but approximately half of all staff were 'not at all satisfied' that this was the case. A high proportion of staff were either dissatisfied with, or did not know about, the similarity (or otherwise) between the standards they apply and those in other colleges, nor were they satisfied with the opportunities which exist for inter-college collaboration.

There was a desire for more appropriate guidance but, perhaps surprisingly, there was less dissatisfaction with the number of subject assessor visits than might be expected. However, subject assessors did not escape entirely unscathed in the lecturers' written comments. There were claims that subject assessors were not always consistent and that this could be demotivating for staff. Once again, the amount of paperwork which was felt necessary to meet assessors' needs was considered unwieldy.

Table 4.3: The extent to which staff and employers are satisfied with certain aspects of the moderation system

	satisfied to a large extent %	*partially satisfied* %	*satisfied to limited extent* %	*not at all satisfied* %	*don't know* %
Staff *(n = 362)*					
• a pre-determined national standard exists for each module	8	19	24	45	3
• the assessment guidelines in the module descriptors ensure a national standard	5	18	25	50	2
• the standards applied in other departments/ colleges are similar to those in your own	16	13	20	38	25
• the number of visits you get from subject assessors is adequate	3	21	26	27	9
• sufficient opportunities exist for collaboration between colleges	3	6	13	67	11
• appropriate national and regional guidance is given	3	13	18	61	5
Employers *(n = 68)*	19	35	26	7	12

It would be easy, given these perspectives, to be critical of the national system for quality assurance but our earlier work on the 'quality of assessment' (Black, Hall *and* Martin, 1989) suggests that the reasons for problems with 'national standards' are not entirely in the hands of SCOTVEC. Some aspects of the National Certificate policy, and particularly the emphasis on tailoring modules to meet local needs or the needs of particular industrial sectors, carry the penalty of reducing the comparability of qualifications across colleges. Some colleges and local authorities have taken the initiative in setting up systems which will encourage inter-college comparability while others have not. Moderation of any college-based teacher-assessed qualification is bound to be difficult. These findings indicate that the reservations which lecturers, in particular, had and which we reported in our earlier work, still exist. What must be recognised, however, is that there will always be limitations on the extent of cross-college comparability and that enhancing this will involve the active support not just of subject assessors but also of the colleges themselves.

It is worth noting that there were distinct differences between staff in different colleges in their attitude to moderation. This suggests that there are some colleges where internal or local moderation systems are increasing staff's confidence in the comparability of qualifications. It was possible to rank colleges according to the extent of positive attitudes towards collaboration between colleges expressed by their staff. It was noticeable that three colleges, all in the same Region, came very high in these rankings. Indeed, two of them took first and second place. Two of these same colleges also ranked very high in the extent of positive attitudes towards national and Regional guidelines amongst their staff. Certainly, in the case of collaboration between colleges, this is something which can only happen if there is the administrative and managerial support for it to happen in the colleges. In the case of national and Regional guidelines, the question presupposes that such guidelines exist and that staff are aware of them.

General views on assessment

Overall, there was a striking contrast between employers' and lecturers' views on whether the assessment system had improved since the introduction of the National Certificate: 19% of employers felt it had deteriorated, while the comparable figure for lecturers was 66%. These views reflect a notable trend throughout this account of our findings on assessment—the recipients seemed to be far more satisfied with the assessment system than did those charged with delivering it. However, across the five module groups, there was a particularly marked tendency for staff to say that the assessment system and standards of attainment had deteriorated in all subject areas except Practical Caring Skills, with Electronics staff the most likely to think that the system had deteriorated.

There were, of course, exceptions to this general rule. Although there was no aspect of assessment for which a majority of employers favoured an end-exam, they were ambivalent about continuous assessment for selection and differentiation. It is also worth noting that, in response to another question in which staff were asked whether they felt that 'standards of attainment' had improved or deteriorated, 30% of staff felt that they had deteriorated and only 18% felt that they had improved. (The majority of staff, however, felt that there had been no change, or answered that they did not know). In general, the response of employers was a positive one.

Students held generally positive views but we found that Electronics students were less in favour of continuous assessment than students taking modules in the other four areas, and there were significant differences between students in different colleges. Mature students were significantly more positive than others towards continuous assessment, as were those students taking modules to help with their current job.

Despite their overall preference for an end-exam, some staff were more supportive than others of a continuous assessment system. Some staff respondents, and particularly those in some subjects and some colleges, took a more positive stance than the majority of staff. Furthermore, particularly when we spoke to them during the interviews, many of the lecturers welcomed the use of continuous assessment for a variety of reasons. These included the close focus it gave to individual items of student learning; the guarantee it seemed to give that students did indeed cover the whole 'syllabus'; its role in providing quick and accurate feedback on student performance; and (in a small number of cases) the motivation it can give to students by rewarding them for their efforts. These all seemed, to the lecturers interviewed, to be sound educational advantages of the system which they would be unwilling to forego.

However, in their questionnaire responses, two thirds of all teaching staff with pre-National Certificate experience thought that the assessment system had deteriorated as a result of its introduction, and approximately the same proportion thought that standards of attainment had deteriorated. Staff were least happy with continuous assessment as serving the needs of 'differentiating levels of attainment', 'selecting students for employment/advanced courses' and 'making students remember what they learn'. Once again, it is worth bearing in mind the points of agreement, and contrast, between these lecturers' views and the generally more

positive views of the employers and students. Whether the 'insider' perspective of the deliverers, or the 'user' perspective of the recipients, represents the 'truth' is impossible to say. Overall, however, it would suggest that there are still improvements which could be made to the assessment system. Some of these will be discussed in the final chapter.

5 Summary and Implications

This final chapter has several purposes. First, the summary is a review of the main findings of the report set out in terms of students, employers and teaching staff. It thus provides an alternative way of thinking about the findings as well as a brief description of the main points. In the 'discussion and implications' which follow, we revert to learning, teaching and assessment as headings. The purpose here is to highlight the main findings which might suggest the need for change or for further debate. Finally in this section we include also a brief and more general reflection on the broader implications which this report might have for any programme involving modules.

Summary

The views of the students

Students revealed little understanding of their own learning.

The students had the least to say of all the groups involved in the research, perhaps because they were not used to reflecting on their own experience. This is particularly the case with regard to learning, which very few students discussed in any detail with us. Many of the comments they made were at a fairly superficial level.

At the most negative end of the spectrum of comments, some students were dismissive about the very idea of learning in connection with the National Certificate. Others tended to answer interview questions in terms of the teaching methods used. Nor did the questionnaire responses yield any data which allowed us to reach any firm conclusions about how students conceptualise their learning. Given the rather abstract nature of this area, it is perhaps not too surprising that students did not reveal any sophisticated understanding of the process. However, it is a little disappointing, especially in the light of those Action Plan aims which stressed the development of self-awareness and analysis and evaluation of students' own ways of learning.

Students favoured National Certificate teaching methods.

However, students did react favourably to the more concrete and visible aspects of the National Certificate. They were generally positive about the teaching methods in use and felt that they were an important source of motivation. They also appreciated the amount of feedback which they got from diagnostic assessment. It was interesting to note that students perceived there to be more in the way of diagnostic assessment going on than did staff. It may be that this is simply a reflection of much tighter definitions of 'diagnostic assessment' being used by staff.

Students favoured National Certificate assessment.

Students were also, on the whole, positively disposed towards the assessment system. In particular, they liked the idea of being able to resit assessments, and also liked the fact that there was no exam at the end of the course. Their comments suggested that this was because exams were seen as creating too much pressure and, possibly, being unfair to students who have an 'off day'. A very few students did concede that there might be some advantages to an exam of some sort (not necessarily at the end of the academic year), principally in relation to encouraging retention of knowledge and skills.

The views of the employers

Employers set their own agenda and favoured training which was practical and applied.

The most notable aspect of the employers' responses was the extent to which they set their own agenda. Although many employers did approve of the broad learning aims set out in the Action Plan, we have to set against this those employers who specifically rejected all talk of 'transferable skills' in favour of more narrowly defined and immediately useful vocational skills. This was only a more extreme example of a general tendency among employers to see their ideal of training as

being, above all else, practical and applied. To the extent that the National Certificate was striving for this ideal it was judged to be an improvement on what had gone before.

Employers favoured the flexibility of the National Certificate.

Employers also approved of the increased flexibility of provision which the National Certificate provided, both in terms of negotiating programmes with the colleges and the speed with which modules could be updated compared to the revision of previous courses. There was, however, more than a suggestion that only the larger employers were able to take full advantage of this flexibility.

Some employers thought that training should have an element of 'challenge'.

There was a minority view, but forcefully held, among some employers that they were looking to training to provide more than an input of knowledge and skill, and that it should, in itself, be a challenge to trainees which forces them to develop a certain amount of staying power and determination. This element of meeting challenges and developing 'character' was valued by some employers for its own sake and was felt to be missing from the National Certificate.

Employers said little about teaching.

Employers had very little to say about teaching, perhaps because of their relative unfamiliarity with what goes on in classrooms. What they did say reinforced their commitment to training which was 'relevant', 'practical' and 'applied'. While they did look to colleges to provide academic and theoretical input, they were concerned that this should not become divorced from the practical context in which their trainees would be working. They were also concerned that colleges should motivate their trainees, and tended to see the personal characteristics and backgrounds of the teachers as being important in this.

Employers favoured National Certificate assessment but some wished for greater discrimination amongst students.

On the whole, employers were positive about the assessment system, and saw considerable advantages in continuous assessment, especially in terms of the guarantee it provided that the syllabus had been covered. They were reasonably happy that a national standard existed and was applied. There were mixed feelings about whether assessment should discriminate amongst students. For some this was not a problem—they simply wanted to know whether their trainees had passed or failed. Others, especially those who were looking to send some of their trainees on to more advanced training, were unhappy that it was no longer easy to pick out the 'high fliers' and expressed a desire for some form of grading or merit award.

Some employers were concerned about resit assessments.

There was also some concern expressed by some employers about the ready availability of resit assessments, which were felt to be unfair to those trainees who achieved their learning outcomes on the first attempt. Similarly, as mentioned above, there was a view held by some that National Certificate assessment no longer faced the trainees with a challenge which they had to meet, and that this was a loss.

The views of the teaching staff

Staff were the most negative of the groups of respondents.

As might be expected, teaching staff in colleges had most to say about the National Certificate, and went into greatest detail in their written comments and in interviews. They were also the most negatively disposed of all the groups towards the National Certificate. Although, throughout this report, we have treated learning, teaching and assessment as conceptually separate areas, it was apparent from all that teaching staff had to say that, for a great many of them, assessment overshadowed all other aspects of the National Certificate and coloured their views on all other issues.

It was also apparent to us that many of the lecturers' perceptions of the National Certificate were open to challenge. It seemed to be the case that some aspects of National Certificate implementation which were merely 'suggestions' or 'recommendations' had, in the view of some teaching staff, come to have a prescriptive force. This is the case, for example, with the 'recommended' 40 hours teaching time per module and the 'suggested' teaching methods given in module descriptors. Nor did we come across any examples of teaching staff making use

of the opportunity, which SCOTVEC affords, of devising their own alternative forms of assessment. It may be that there remains a job to be done in informing teaching staff of the freedoms and opportunities which are available to them.

Staff favoured the changes in teaching and learning.

Insofar as we were able to separate out their views on different aspects of the National Certificate, it is generally apparent that most teachers welcomed the changes which had been brought about in learning and teaching. The broad learning aims of the Action Plan were welcomed and there was support for the idea of 'learning to learn', although severe doubts were expressed about whether it was actually happening. Similarly, we found little evidence of systematic and organised attempts to tailor provision more closely to the individual needs of students.

Staff identified constraints on how learning could take place.

Two constraints on the approaches to learning adopted by students were identified. The first was the students themselves. Some staff felt that it was inappropriate for many of their students to be asked to take too much responsibility for their own learning. This was something which was felt to be appropriate only for the more mature and self-motivated students. The second set of constraints stemmed from the assessment system, which was felt by some to encourage a passive, reproductive style of learning and not to encourage any search for a deeper understanding of what had to be learned.

Staff welcomed the increased variety of teaching methods.

A wide variety of teaching methods was in use, with more reported use of 'non-traditional' methods than had been the case before the introduction of the National Certificate or, indeed, than was the case with other forms of course provision. However, traditional 'whole class' teaching had not been abandoned, and was still seen to have a valid role to play by many lecturers. Lecturers were generally positive about the changes which had taken place in teaching methods, and welcomed the increase in the repertoire of methods in use. There was a higher incidence of the use of diagnostic assessment reported by staff than we had anticipated, and the responses from the students showed that they welcomed this use of assessment.

Staff identified several factors which constrained their choice of teaching methods.

Several constraints on teaching were identified by teaching staff. These included: pressures to cover the syllabus with limited time and resources available; module descriptors which were sometimes felt to be too prescriptive, leaving the lecturer little freedom; the difficulty of managing individualised learning; and the administrative workload, much of it concerned with assessment requirements, which detracted from teaching. These constraints were sometimes considered to lead to lecturers using methods which they might not necessarily think were the best or most appropriate.

Criterion-referenced assessment was accepted and continuous assessment was welcomed by staff.

Staff had most to say about assessment, and had some severe criticisms to make. They were not, however, entirely negative about it. There appeared to be a general acceptance of the principal of criterion–referenced assessment as such. This was no longer something which was questioned by staff, as it had been in earlier research on the National Certificate. Continuous assessment was also generally held to have a number of advantages in ensuring coverage and helping students to learn, although there were some doubts about whether the practice matched the aspirations. A much wider variety of assessment methods was in use than had previously been the case.

Some staff doubted whether continuous assessment was sufficient in itself.

However, many staff had doubts about whether continuous assessment was sufficient in itself, and expressed a desire for some form of examination. It was felt that this would be a better check on whether or not the students had retained the knowledge and skills they had gained and would help in differentiating between students and selecting students for advanced courses and/or employment. The lack of grading in the National Certificate was a worry to many staff who felt that, as a result, the more able students were demotivated by not being rewarded for their greater achievement. The standards set by the performance criteria were thought by some to be 'minimum' standards and there was little or no incentive for any student to go beyond these. The availability of resit assessments was also

thought to lead to some students 'playing the system' by attempting an assessment before they were ready for it simply to see what would be involved, rather than concentrating on their learning. There was also heavy criticism of the amount of administration and paperwork associated with the assessment system which was thought to detract from teaching and learning.

Staff expressed concern about moderation.

A further set of worries amongst the teaching staff concerned the effectiveness of the moderation system. Staff were not convinced that national standards were clear; that information in the module descriptors was either sufficient or clear enough to ensure standards; that there was comparability between colleges; that there was enough collaboration between colleges; or that adequate national and regional guidance existed. There were differences between colleges on these matters, with staff in some colleges being more positive than others. Our speculative explanation for this is that staff in colleges where there was a greater degree of local support, staff development, and a local moderation system, were less concerned about these matters than others. To a large degree it is a matter of confidence in the system, and such staff did appear to have been more reassured than others.

Staff from different subjects held a variety of views.

However, these were not the only differences which existed between different groups of staff. As might be expected, staff teaching different modules did not always respond in the same way. So it was apparent that Practical Caring Skills staff were generally more favourably disposed towards the National Certificate than other groups, and Maths and Electronics staff were generally more negative. PCS staff were the most likely to think that the introduction of the National Certificate had brought about most improvement in further education; they were more likely to think that it motivated students; they had a greater degree of preference for continuous assessment; a greater degree of belief in the importance of student-centred learning; they were more likely to rate the National Certificate as vocationally relevant; and were more likely to think that National Certificate assessment allowed them to discriminate amongst students.

There were differences between colleges.

There was also a series of consistent differences between staff in different colleges, most of which related to the broad areas of teaching and learning. These included the extent of use of those teaching methods recommended in the Action Plan/National Certificate literature; the extent to which staff think that student-centred learning is occurring in practice; the degree of improvement brought about by the National Certificate; the degree to which they are positive about collaboration between colleges and national and Regional guidance; and a long list of individual items which are detailed in the learning and teaching chapters.

Local collaboration and quality assurance may influence staff attitudes.

Four colleges in particular stood out as being consistently more positive about the National Certificate than others. Some of the items for which these differences occur give clues as to why this should be. We suspect that it has much to do with the local organisation of the colleges, the extent of local moderation and contact between staff, and that staff in these colleges have had a greater degree of administrative, managerial and staff development support than their colleagues in other colleges.

It should be noted that, although we checked, we found no differences between the perceptions of teaching staff which could be explained by reference to the age, gender or experience of the respondents.

Discussion and Implications

The briefest of summaries of our findings would say that students and employers were generally favourably disposed to the National Certificate but that teaching staff had many more misgivings; that the learning and teaching approaches adopted had been welcomed; but that the one area where most concern was expressed was the assessment system, and that that concern was expressed most forcibly by the teaching staff. Like all brief summaries that would be a gross

over-simplification but it does set the background against which to place our more detailed comments.

We should also repeat the proviso set out in the introduction, namely that it is, to some extent, an artificial exercise to separate learning, teaching and assessment in the way we have done. There are conceptual differences between them, of course, and we hope that the distinctions we have made have helped to clarify some of the issues involved but in the reality of the classroom it is the links between them which are of far greater importance. So also, in our data, we have found that many of the comments made by our respondents have pointed to the effects of one area upon another. Teaching and learning have an obvious cause and effect relationship (if all is well) and discussion of one area easily slides off into the other, but equally the assessment system has its effects on how teaching and learning take place.

Learning

The 'learning' aims of the Action Plan were welcomed by all groups.

It was very clear that the effects of the National Certificate on learning were viewed positively, especially by the students and the employers. All groups approved of the aims and aspirations set out in the original Action Plan document. With few exceptions, the widening of the content of the curriculum, the purposes of learning, and the approaches to learning which were recommended by the Action Plan were welcomed. However, as might be expected, practice was thought to fall short of aspirations.

The National Certificate may not be promoting 'learning to learn'.

First of all it must be questioned whether the National Certificate is succeeding in promoting the idea of 'learning to learn'. Certainly the teaching staff appear to value this aim, yet they are not convinced that the National Certificate achieves it. Also, it was apparent from the interviews with students that very few of them had any deep understanding of the processes of learning which they themselves had been through. Therefore, insofar as the Action Plan suggested that lecturers should 'help students to analyse their learning experiences and evaluate their own performance', there is clearly scope for improvement.

We must, however, confess to having doubts about the extent to which this is achieved at any stage of Scottish education. Arguably, non-advanced further education is not the place for this kind of learning to begin. If these skills of self-analysis and self-evaluation are important, and if the students arriving in colleges do not possess them, then more needs to be done to promote them. But if this is so, then the problem should be addressed much earlier, perhaps even in primary schools.

There is some doubt about how such long-term aims as promoting student responsibility fit into a modular framework.

Similarly, there were some respondents who felt that it was inappropriate to ask some students to take responsibility for their own learning as the students would not be able to cope with this. This may well be the case with some students, but it should still remain a longer term aim of teaching. The question then is whether a modular framework is such as to allow for the gradual progression to such longer term aims. The division of the curriculum into relatively short modules may act to confine teachers to short–term aims. This, then, is not only a problem for individual teachers, who are faced with the problem of teaching students what they can in the time available but is also a consideration for curriculum planners.

There is a danger that students may concentrate on short-term aims.

A closely related danger, which demonstrates the connection between the assessment system and student learning, was mentioned by some staff, and some students. This was of a kind of educational 'short-termism' whereby students concentrate only on 'storing, not learning' enough information to achieve the next learning outcome and do not look beyond it. The result is a very passive form of 'learning' which was clearly not one of the aspirations of the Action Plan. It also lessens that element of intellectual 'challenge' which some respondents valued. Partly this may point to a deficiency in some learning outcomes — if they ask for no more than passive, short term storage then the students are, from their point

of view, behaving in a very efficient manner in doing no more than is asked for. However, it is possible that it is also an inherent danger in any curriculum which is split up into discrete units, each of which can be tackled separately.

There were perceived differences between different groups of students.

It is worth noting that not all students were accused of acting in this way. Mature students and those who were thought to be 'self-motivated' were specifically exempted from the charge. The breaking up of the curriculum into short, discrete units was also thought to be of benefit to those students perceived as being of lesser ability, who might not otherwise have achieved anything, and therefore it is not without its positive aspects. However, if we want students to do more than attend to one learning outcome at a time, if, that is, we want them to integrate their learning into a whole, then thought should be given as to the ways that they might be encouraged, and rewarded, for so doing. It is probably not enough to rely on students finding their own reward within themselves since comparatively few will have this kind of intrinsic motivation, especially if they have not developed the ability to 'analyse' and 'evaluate' their own experience.

Different methods of programme organisation should be considered.

In earlier research which we conducted (Black, Hall and Yates 1988) we found instances where two or more modules were packaged and taught together, so that the same teaching content and context enabled students to achieve learning outcomes from more than one module. We also found that, in the view of the staff concerned, this reduced problems of remediation, the integration of learning, and time pressures. In the current research project we had no instances of this happening brought to our attention but it should perhaps be considered by teaching staff as one way to lessen some of the problems associated with what we have called 'short-termism'.

Employers saw a definite role for FE colleges.

Employers had their own comments to make on learning. They recognised that FE colleges had a definite role to play in providing them with training, and that this role differed from that fulfilled by their own in-house training. They wanted the colleges to supply the 'theory' but also wanted this 'theory' to be relevant and grounded in practice. The National Certificate was seen to be an improvement on previous provision in this respect. A very few employers took an extreme vocationalist view of training, seeing it as limited to practical, hands-on, directly job-related learning with no element of personal or social development for the trainees, and had little belief in such concepts as 'transferable skills'. The majority view was that, as long as the National Certificate provided the immediate training that the company required, then these things were welcome as 'a bonus'. The Action Plan, however, was based on a very broad interpretation of vocational training, which retained a place for wider 'educational' aims.

Smaller employers may not be able to take full advantage of the flexibility of modular provision.

There was also some question about the degree of flexibility which was offered to employers in tailoring provision to meet their needs. There was no problem with larger employers but there was a suspicion that smaller employers cannot take advantage of the flexibility of a modular system to the same extent. It may be that, as the need to attract students increases, colleges will have to consider more closely how they can best meet the needs of these employers.

Teaching

Changes in teaching were welcomed but constraints were identified.

The National Certificate has brought about great changes in the ways that lecturers in further education colleges go about their teaching, and all of the groups we interviewed welcomed the changes which had occurred, though the employers had relatively little to say as many felt that they could not comment on what happens in classrooms. Student–centred learning, and the teaching techniques implied by it, had become an accepted part of the landscape, though it was not always clear if all staff were interpreting it the same way. There was, however, a clear feeling that while the aims and ideals of student–centred learning were accepted, it was not always put into practice. Some of the reasons for this are the same as those already discussed in the previous 'learning' section but there were also various practical constraints, principally of time and resources, which

some staff felt were inhibiting their teaching methods. Nevertheless, there had been some success in introducing a much wider range of teaching methods into normal use in further education than was previously the case.

College differences existed.

However, the most interesting finding was that there were clear differences between colleges in the extent to which they were using teaching methods recommended by the Action Plan and National Certificate literature; claimed to be implementing student–centred learning; and had positive responses to a related group of items on teaching and learning. It appeared to us that four colleges in particular stood out as being very much more positively disposed than others and that this would seem to be explained by the amount of administrative and staff development support which staff in these colleges had available to them. There is an obvious message here for all colleges.

Diagnostic assessment is achieving an articulation between teaching and learning.

Finally, it is worth reflecting a little on our findings on diagnostic assessment. Surprisingly large numbers of staff and students claimed to be using it, and students rated feedback from assessment as one of their favoured ways of learning. The suggestion here is that the National Certificate model, perhaps by the clear focus for students and staff on what has to be learned and perhaps because staff are obliged to give students several attempts to prove their competence, has been particularly successful in achieving the worthwhile articulation between teaching and assessment which was envisaged in the Action Plan.

Assessment

Since the largest single change brought about by the introduction of the National Certificate was to the system of assessment, we were not surprised to find that this was the area about which respondents had most to say, and that much of what they said was critical. Teaching staff, in particular, are now much more directly involved in the process of assessment and are therefore much more aware of the flaws inherent in it than they were under the previous system. No system of assessment is perfect but in the past teaching staff would have been much less directly aware of its imperfections.

Continuous assessment had advantages for all groups.

However, we must not overlook the fact that all groups saw advantages in a system of continuous assessment, and would not wish to see them lost. If there are legitimate criticisms to be made they must be set against this background.

There were four main criticisms of assessment.

There are four main areas of criticism of National Certificate assessment which were made to us. These were: the pressure which it put on teaching staff; the effects which it could have on student learning; the desire for some form of differentiation between students (usually expressed as a desire for grading); and the lack of confidence in the system of moderation.

Pressure of administration.

Teaching staff frequently complained about the pressure put on them by the assessment system. There was a feeling amongst some staff that too much of their time was taken up with assessment to the detriment of their teaching but it was less the assessment itself which aroused strong feelings than the perception that much of their time was being spent on associated paperwork and administration. Any initiative which would reduce unnecessary record–keeping would be welcome to teaching staff.

Staff wished to discourage superficial learning and encourage retention but did not always think that the assessment system supported this.

In the learning section we have already mentioned the danger which some respondents saw of the assessment system encouraging a superficial approach to learning on the part of the students. Certainly this was one element which contributed to the common desire amongst teaching staff to see some form of exam re-introduced to help instil into students the idea that there was more to learning than just storing enough information to achieve the next learning outcome. There was also the feeling that an exam would encourage a greater degree of retention of knowledge and skills than they thought was the case with the National Certificate, and would provide the students with a challenge. It is important to note

that what staff wanted was to discourage superficial learning, encourage retention and provide this challenge. It may have been natural for them to think of an end exam as the alternative to National Certificate continuous assessment but it is not the only possible alternative. There may well be other ways of achieving these aims which are more consonant with the philosophy of the National Certificate.

Some respondents expressed a desire for greater differentiation amongst students' attainments.

Teaching staff and others also looked towards an end exam to address the third main area of concern - how to differentiate between students. Normally this was expressed in terms of a desire to be able to award some form of grade to those students who had performed particularly well. There were two main reasons for this desire: the first was to reward, and hence motivate, the 'more able' students who, it was felt, were demotivated by the lack of recognition of their achievements and consequently put only a minimum of effort into their work; the second reason was for purposes of selection, especially for selection on to advanced courses.

This need not imply an end exam.

However, the re-introduction of an end-exam would seem to be a counter-productive suggestion, especially given the general acceptance of the principle of criterion-referencing and the perceived benefits of a system of continuous assessment. Whatever is suggested to counter these criticisms should, as far as is possible, preserve the advantages of the National Certificate and be consistent with its philosophy. An end-of-module exam might be less damaging in this respect than an end-of-course exam, but it may be that there are other alternatives which are preferable.

It may, for example, be possible to arrange for more sets of modules to follow the pattern of the Communication modules, where several modules share essentially the same learning outcomes, but have differentiated performance criteria, thus allowing a degree of 'grading' but remaining criterion-referenced. Special 'merit' learning outcomes and performance criteria could be written and added to modules. There could be a greater degree of 'end-on' articulation between related modules, so that the second module in a series builds on, and takes further, the skills acquired in the first, and students are encouraged to get as far up the series as they can. Or, within the context of whole programmes of modules, special modules could be provided which bring together some of the key learning outcomes from the programme (which will already have been covered elsewhere), set them in a more 'integrated' context, and judge attainment against more demanding performance criteria. All of these are possible answers to some of the problems outlined above. Each will have its advantages and disadvantages, and perhaps should be investigated further.

Although moderation was poorly perceived, this was much less so where effective local arrangements were in operation.

The fourth area where there were grounds for concern was in the perceptions of the system of moderation, especially amongst teaching staff. It was clear that there was a widespread lack of confidence that there were clearly understood standards which were applied consistently in all colleges. To a large extent this appeared to be the effect of the fact that the teaching staff simply did not know what was happening in other colleges, although there was also an element of perceived inconsistency on the part of some subject assessors. However, we think it important that perceptions in four colleges were very much more positive than elsewhere. This reinforced our hypothesis that adequate local support does a great deal to enhance the confidence of teaching staff in what they are doing. We already know from previous work that a system of local moderation can have substantial beneficial effects in this area (Black et al, 1988, 1989). Given that the national quality assurance system does not seem to be enhancing the confidence of the teaching staff, it might well be a worthwhile exercise to investigate further the possibility of encouraging much more in the way of local moderation conducted by the teaching staff themselves. Of course, this would have resource implications for both the colleges and the local authorities, but unless it is investigated further we will not know whether these would be outweighed by the benefits.

Modular curriculum design in practice

We began this report by suggesting that National Certificate development was only one example of a growth of interest in modular curriculum design in recent years. While the findings in this report can only be related directly to the delivery of National Certificate modules in further education colleges it is perhaps appropriate to conclude by speculating on what some of the broader implications of our study might be.

Flexibility

Our findings on flexibility are mixed and tend to confirm earlier work at SCRE (Hart, 1987) which suggests that flexibility in modular systems is possible but is difficult to achieve. The group which spoke most about flexibility was the employers who saw advantages in negotiating more appropriate courses tailored to their needs. However, as we have pointed out, this tended to be an advantage identified for us by large employers and seemed to be less accessible to small employers. Given the pressures exerted from the outset by some industrial groups to devise sets of modules which are mandatory components of particular courses, the extent to which flexibility has proved to be a major advantage to industrial users of this modular system must be in doubt.

Flexibility was not mentioned by students and discussed little by teaching staff. Indeed, if anything, these data suggest that the flexible use of time may be less prevalent than noted in our earlier studies. There seemed to be widespread adherence to the recommended 40 hour timetabling block. This is understandable in terms of time and resource management but ignores the fact that some students may need far less time and others may need more.

Styles of teaching and learning

However, if the real advantages of flexibility were in doubt, the evidence on staff and student reactions to the styles of teaching and learning they came to associate with modular courses was much more positive. There is of course no necessary relationship between modularising the curriculum and teaching students in particular ways. However, in this particular case, the clear identification of modular learning outcomes was associated with greater emphasis on student–centred learning strategies and the use of assessment for diagnostic purposes, and was widely welcomed by staff and students alike. The emphasis on clearly articulated short-term aims was also seen as benefiting slow attainers and this again supported one of the fundamental arguments in favour of modular designs.

Emphasis on short–term aims

However, it is important to recognise that this same characteristic of the modular design was seen to be at the root of several of the deficiencies cited by teaching staff and employers. Thus, as we have already indicated, the emphasis on short–term aims was seen by some teaching staff as encouraging passive, reproductive styles of learning at the expense of developing deeper understanding. It was seen as making it more difficult for teachers to focus on long–term aims such as helping students to take greater responsibility for their own learning. And employers in particular voiced concern that the emphasis on short–term aims was less of a challenge than that which faced students on traditional two year courses. Throughout the report, we have argued that these are not necessary features of National Certificate delivery and that there are ways of circumventing them. But the general point which must be made here is that the much acclaimed advantage that modular course design offers clear short–term aims for students and teachers alike, can in practice lead to difficulties which are potentially serious unless dealt with systematically.

Overall, the availability of a catalogue of more than 2500 modules has been widely welcomed by Scottish education and by industrial users. A programme which began as an attempt to rationalise the provision of accreditation for 16-18 year olds in non–advanced further education has revolutionised teaching and learning in that sector and had substantial impacts in secondary schools as well as offering a flexible vehicle for such innovations as the accreditation of prior and work-based learning. Any criticisms at the micro level in this report must therefore be read

within the broad understanding that rationalising and modularising course design and accreditation within the model suggested by the Action Plan has been seen by those involved to be a substantial improvement on the system it was designed to replace.

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SELECTED SCRE PUBLICATIONS

PRACTITIONER MINIPAPERS

1991

Modules: Teaching, Learning and Assessment
A study of the views of students, staff and employers involved in the National Certificate
Harry Black, John Hall and Susan Martin £4.50

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Margot Cameron-Jones
This booklet concentrates on the practical side of training. Solidly based on the author's research and practical experience, it presents clear guidelines for being 'a good trainer'. The aim is to help the many people who find themselves involved in training teachers or in hosting placements as well as those with more formal responsibility in colleges. Chapters on—Training and Placement; Procedures for Training; Training Methods; Appraisal of Performance; The Good Trainer; are supplement by case-examples. This succinct and stimulating summary will be welcomed by the many organisations interested in the placement and training of their own staff as well as in teacher training. £4.50

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P Munn and E Drever
The second of SCRE's teacher/researcher guides, provides practical and sensible advice, based on research expertise, for teachers looking for reliable results without waste of time or effort. The reader is guided through whether to use questionnaires; sampling; drafting and administering the questionnaire; analysing data; and interpreting and presenting results. The booklet will be useful not only to teachers but also to anyone engaged in evaluative and investigative work. £3.90

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The Quality of Assessments: case-studies in the National Certificate
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Stress in Teaching: an overview of research
M Johnstone
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1988

Adult Participation in Education and Training
P Munn and C MacDonald
Recurrent education and training are vital to sustaining economic growth yet little is known about the extent of participation among the general adult population. This book reports the findings from a survey of almost 2,000 adults on their attitudes towards returning to education and training. It identifies differences between returners and non-returners and highlights factors affecting participation. The policy implications of the survey are drawn out, chapter by chapter, and are then summarised in the final chapter. £4.80

Assessing Modules: staff perceptions of assessment for the National Certificate
H Black, J Hall and J Yates
The National Certificate is one of the most important developments to make use of criterion-referenced assessment and a modular curriculum design. NC modules form the basis of programmes in a wide variety of educational contexts. This report identifies the successes of the programme and illuminates some of the problems which have had to be faced. £3.50

1987

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M Johnstone and P Munn
A review of the literature on discipline in schools concentrating on British research. The general reader, teacher, education authority official, adviser or college tutor will find it useful in drawing together the literature on aspects of discipline which schools and teachers may be able to affect.

£3.90 (pbk) / £6.90 (hbk)

So You Want to do Research? A guide for teachers on how to formulate research questions
I Lewis and P Munn
This booklet provides guidance on how to turn an issue of general concern into a worthwhile and feasible piece of research. Equally valuable to teachers working on their own or as part of a team, whether school-based or in conjunction with other support services. The first of the SCRE teacher/researcher guides. £2.20

OTHER PUBLICATIONS

1991

Hurdles and Incentives: introducing Media Education into Primary and Secondary Schools
Sally Brown and Paula Visocchi
In 1988/89 a number of schools were involved in a Scottish Film Council project on media education. Researchers at SCRE, took the opportunity to document and analyse policy and practice in pilot schools. This report does not give all the answers because there was neither time nor money to ask all the questions. but it offers a variety of alternative ways of embodying media education into the school curriculum and the implications of making choices among them. £4.50

1990

Geography Settlement Studies: a diagnostic assessment resource
This package provides a range of instruments linked to the Settlement Studies Unit produced by the Central Support Group for Geography. The set of over 40 masters are copyright–free. Most of the instruments are in sets of three graded assessments—Foundation, General and Credit—linked by a common context. Two of the assessable elements, knowledge and understanding, and evaluating, are assessed. The accompanying Teacher's sheets give the EGRC statement, Level and Key Idea assessed and a suggested marking scheme. £8.50

Secondary Mathematics Checkpoint S2
Checkpoint S2 is designed to provide teachers with a comprehensive set of assessment instruments for use with pupils aged 13/14 years. These are grouped under three headings: Knowledge & Understanding, Information Handling and Reasoning & Applications. Each instrument is classified in relation to the attainment targets of the 5/14 Development Programme (Scotland) and the National Curriculum (England & Wales). Discussions with individual students explored the strategies used to deal with problems in the Reasoning & Applications section and these are documented in the teachers' guide. £37.50

Technology: an annotated bibliography
E Turner, H Black, and M Devine This bibliography is useful to teachers of any subject involved in teaching aspects of technology. It lists over 400 references to school textbooks, government reports, journal articles and other materials. £6.50

1989

Aspects of Assessment: a primary perspective
H Black, M Devine and E Turner
This booklet considers assessment practices in primary schools through 7 case-studies, looking at the policies and practices local authorities are developing, and where teachers believe they need support. Topics include: local authority guidelines, a structured diagnostic system for the assessment of maths, profiles and other means of recording progress, and reporting to parents. £4.80

Education in Transition: what role for research?
S Brown and R Wake (eds)
A stimulating collection of papers applying research to matters of current concern: *John Nisbet*: changes in educational research over the past 60 years; *Gordon Kirk*: a century of changes in the professional preparation of teachers; *Margaret Sutherland*: changes in education for women since 1945; *David Hamilton*: current reforms of schooling within a context extending back to the 12th century; *Ian Stronach*: vocationalism; *Alastair Macbeth:* the role of parents in schooling; *Eric Drever*: resource-based teaching; *David Hartley*: new curricular provision; *David Raffe*: training schemes for young people; *Donald McIntyre:* transition from student-teacher to classroom teacher; *Margaret Clark*: transition from pre-school to primary school education. £8.50

Technology in Home Economics
E Turner, H Black, J Hall, and M Devine
Can home economics provide pupils with experiences which contribute to their technological education? This book describes efforts being made to emphasise a technological approach. £4.50

1988

Mathematics Checkpoint 4
Assessment materials for primary 4 pupils (8-9 years)
H Black and M Devine. £35.00

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Assessment materials for primary 7 pupils
H Black and M Devine £35.00

Standard Grade Assessment: a support package
H Black, M Devine, E Turner and C Harrison £6.50

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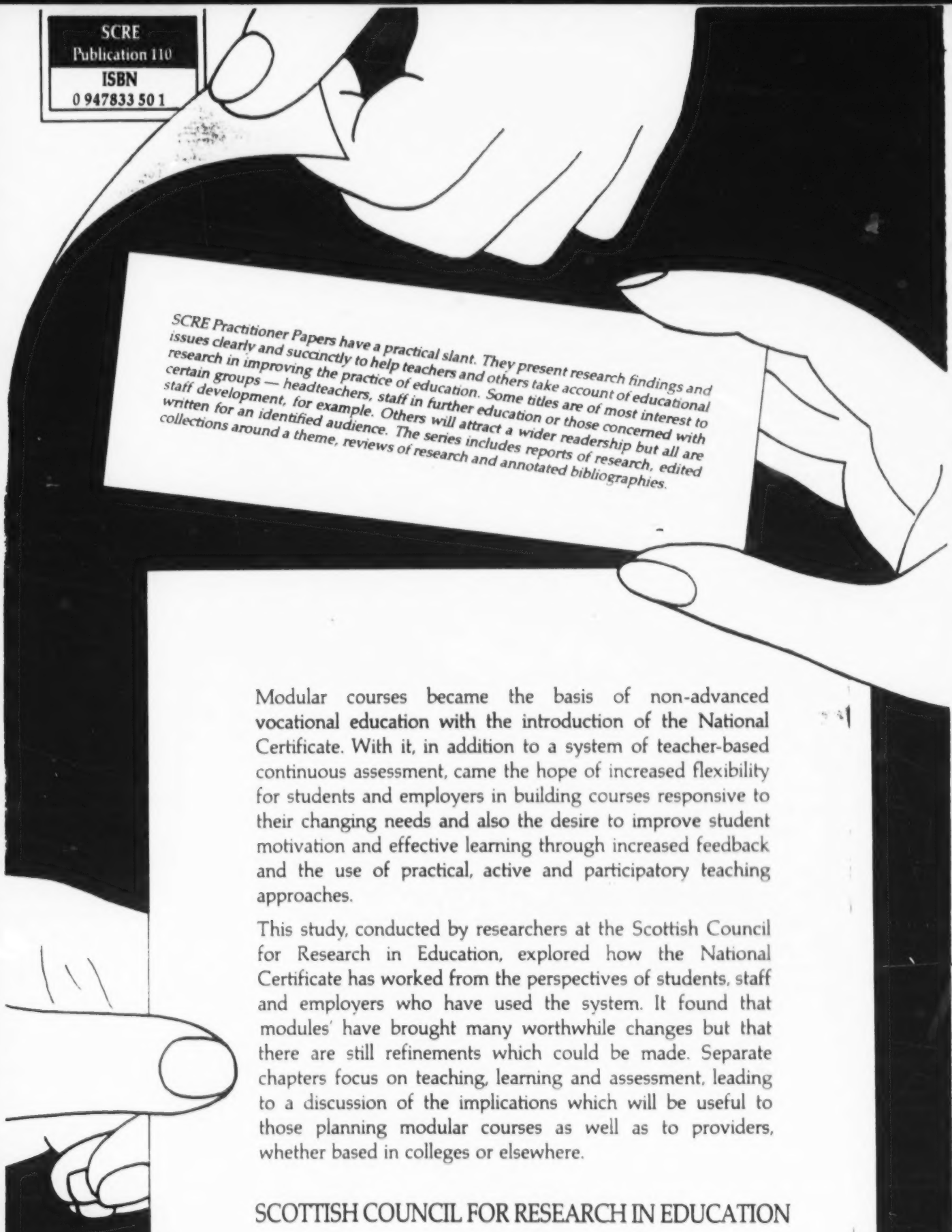

SCRE Practitioner Papers have a practical slant. They present research findings and issues clearly and succinctly to help teachers and others take account of educational research in improving the practice of education. Some titles are of most interest to certain groups — headteachers, staff in further education or those concerned with staff development, for example. Others will attract a wider readership but all are written for an identified audience. The series includes reports of research, edited collections around a theme, reviews of research and annotated bibliographies.

Modular courses became the basis of non-advanced vocational education with the introduction of the National Certificate. With it, in addition to a system of teacher-based continuous assessment, came the hope of increased flexibility for students and employers in building courses responsive to their changing needs and also the desire to improve student motivation and effective learning through increased feedback and the use of practical, active and participatory teaching approaches.

This study, conducted by researchers at the Scottish Council for Research in Education, explored how the National Certificate has worked from the perspectives of students, staff and employers who have used the system. It found that modules' have brought many worthwhile changes but that there are still refinements which could be made. Separate chapters focus on teaching, learning and assessment, leading to a discussion of the implications which will be useful to those planning modular courses as well as to providers, whether based in colleges or elsewhere.

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